University of California, Riverside No. 40, Winter 2016-17

Friends of the Entomology Research Museum

Newsletter

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FERM: Friends of the Entomology Research Museum is a UCR campus sponsored support group whose membership is open to students, faculty, staff, and the general public. Annual dues are ten dollars. Membership privileges include the annual meeting, newsletter, and other occasional meetings and events including field trips and lectures by entomologists and other naturalists.

Newsletters Online!

Back issues of the FERM newsletter are now available for online viewing! They can be accessed at the following URL:

http://entmuseum.ucr.edu/join_us_ferm.htm

The FERM Newsletter is published annually and contains articles written by FERM members. If you would like to submit an article, please send it as a Word or RTF file using one of the following two methods: (1) an attachment via email to the editor (see below) or (2) a hard copy version on disk. Submissions will be published in the order they are received in accordance with space availability and relevancy to the FERM general readership. If you have questions please contact the FERM Newsletter editor, Doug Yanega: dyanega@ucr.edu

2017 FERM ANNUAL MEETING

Saturday, February 11, 6 PM

The 2017 Annual FERM meeting and Potluck Dinner will be held on February 11th, at the U.C.R. Entomology Bldg. foyer and large conference room, on the ground floor.

Setup starts at 5:15 pm

Dinner at 6:00

Lecture at 7:00

What to bring: something for yourself and 3 others. FERM will provide cups, plates, utensils, some snacks, and drinks.

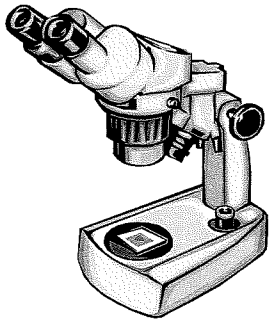
This year's guest speaker is **Jeff Cole**, from Pasadena City College. The title for the talk is:

"The song does not remain the same: diversity and evolution of insect acoustic signals"

Jeff earned a bachelors degree from UCLA in 2000 and a Ph.D. in Entomology from the University of Kansas in 2009. Jeff is currently an assistant professor at Pasadena City College, and conducts insect science as an adjunct faculty member at CSUN in the lab of David Gray, and also works as a research associate at the Natural History Museum of LA County. His interest in sound-producing insect groups arose from combining his two strong interests: insects and music. Naturally, we expect to have some diverse and interesting discussions before and after the presentation. See you all there!

NEWS FROM THE MUSEUM

by Doug Yanega, Senior Museum Scientist



2016 was a busy year for the Museum, one of the busiest ever, in fact, thanks mostly to several workers processing specimens; Stephanie Kim has been doing HMDS dehydration and point-mounting, while Kristine Ziadie has been doing labeling, and Cole Watson has been volunteering to help curate, as well as having been hired recently to help database a large voucher donation from Gordon Pratt, of insects from the China Lake NWRS. As is typical, there have been many donations, mostly from the usual donors - Gevin Kenney, John Pinto, Mark Hoddle, and Greg Ballmer. All told, we added over 30,000 specimens, the biggest single-year increase ever, from either recent donations, vouchers, or processed backlog, in the past year.

Adriean Mayor was around for the majority of the year working on our melyrid beetles, and especially vigorous about field work, with dozens of different collecting trips all over California. As with the material from previous decades, these will all play a part in his revisionary work on the Dasytinae, and ultimately be deposited here.

Only a few significant loan returns came back this year; and we had relatively few visiting curators. We did finally manage to repatriate all of our ant collection from the LACM, where some 14000 of our specimens had been residing for decades. We are hopeful we soon begin repatriation of the much smaller number of bees and wasps still at the LACM, as well as our former primary type collection from the California Academy of Sciences, which has been on indefinite loan for several decades. This year, as last, a number of potential loans were avoided by sending database information or photographs instead of physical specimens, or tissue samples only (including a leg from an extinct moth species from Fiji). The number of new loans being generated by non-targeted requests via social media (mailing lists, FaceBook, etc.) continues to increase. As is usual, I gave several newspaper and magazine interviews, a TV appearance, several tours, and continue to help manage traffic in the FaceBook groups that involve insect ID services, a task which I'm being helped with by former Entomology SRA Rob Velten.

The Museum's regular database has massively grown, to roughly 550,000 records, which is fantastic for a collection of about 4 million. I was personally on relatively few significant collecting trips this past year, but this included a major field trip to Guatemala, and found a few more new species there, as well as witnessing a volcanic eruption. Several of the folks who had loans out of our material described new species this past year, as well, including a new bee species from SoCal named *Perdita yanegai*, from specimens I had set aside years ago as a potentially new species (evidently, I was right!).

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 (on the back page this time) the usual dues renewal form, which we hope you'll send in soon. Thanks very much!

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're happy to say we've gone 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!

Cars do not like rocks
Michael C. Orr

"To dare is to lose one's footing [and oil pan] momentarily. To not dare is to lose oneself." — Soren Kierkegaard

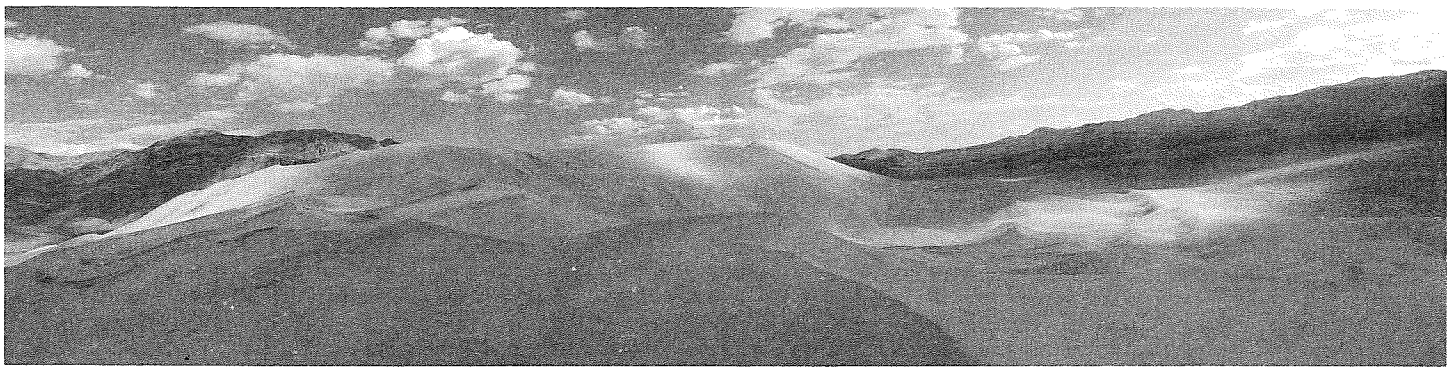
As many of you likely know, field work isn't always fun. There are times when "it could be worse" is a much-needed mantra. If I ever need such a reminder, I always turn to my memories of studying for comps while camping behind an auto repair shop for three days. The best collecting I found during that time was in a junkyard littered with old cars, which is rather sad since I work on bees rather than beetles (are puns more excusable when obscure rather than blatant?). Since my title has already spoiled the story's ending, I suppose I may as well tell the rest of it.

It was my third time working in Death Valley National Park and my second time at the Eureka Dunes, but it was my first time doing either after a series of insane death-storms had ravaged the park's roads. Our lab at Utah State had a permit to, formally, improve our knowledge of the park's species, and, more informally, play in the desert. Dune endemics were a primary focus, so I was targeting the numerous systems throughout the park. My contacts had told me that the road to the Eureka Dunes was closed, but that it should still be passable for my light SUV. It might have been if one rock were in a different spot… but then I couldn't have written this article and you couldn't then suffer through it.

Driving east over the Inyo Mountains from Big Pine, I found that the main road was surprisingly clear, well-repaired where a few narrow washes had channeled water from the surrounding mountains into road-blasting water drills. The worst of them had excavated a five-foot drop, and it was still guarded by a road closed sign despite the repair. Eventually, the last remnants of the mountains to my right gave way as I descended southeastward into the flats of Eureka Valley, revealing a distant, but distinct, patch of tan against the mountains' umber backdrop. It was the Eureka Dunes, one of the tallest aeolian dune systems in North America (see the nice panorama photo below). With the Last Chance Range standing before me, I turned south onto the unpaved Eureka road, passing yet another road closed sign as I went. Last Chance, indeed.

This road was markedly less amicable than the paved one prior. Driving over alternating rocky washboards and sand, I struggled at times to maintain the necessary balance between the speed needed to clear the sand and the caution required to avoid the foot-deep drops spread throughout. The sprinkles on that rather dry cake were unappetizing rocks generously strewn in my path. Needless to say, I was grateful to finally park at the dry camp below the dunes. A quick inspection revealed no damage to my car. *Temporarily* freed from worries of hiking the fifty miles back to Big Pine, I grabbed my net and set out to collect.

The recent rains had unfortunately already long since borne fruit, their flowers largely a distant memory, withered by a subsequent dry spell. I nonetheless had some limited success on *Sphaeralcea* (globe mallow) beside the dunes, though I knew this was a rare pick for my target group of *Anthophora* bees (Apidae). Looking to the dunes themselves, I could make out the dull, icy green of *Psorothamnus* (smoke tree). It didn't take long to spot a small, unusually fast bee circling the bush at a height scarcely above the sand… *Anthophora hololeuca*, the only such *Anthophora* which regularly visits that plant (this month's photo insert).



Though somewhat disappointed, I was happy to have found anything in such dry conditions and also relieved that my car had made it through unscathed.

As you may have guessed, I wasn't so lucky on the way out. Given the darkening sky and my own fatigue, the way back was a bit bumpier. I could make more excuses... but you'd probably get bored and stop reading, so I'll cut to the chase. Traversing what was the last of the seemingly endless washouts, I stopped to relax, opening the door to step out and take in the scenery one last time before departing.

It was fantastic. For me, nothing can challenge the austere purity of the desert. And, without wind, even the slightest sound was jarring —drip, drip, drip— some moreso than others. I was on the ground beside my car within perhaps five seconds, staring at a small puddle of slowly accumulating, dark liquid.

All my lethargy was dispelled in a series of colorful expletives as I flew to my feet, jumped back into my car, slammed the door, and began driving. My plan was exceedingly simple: drive toward Big Pine until the oil light comes on, then start hiking. I was thankful that the road was closed as I sped along the narrow route back, making tight turns I wouldn't normally trust my car to perform. Maneuvering through the darkening canyons as night fell, I mentally inventoried my supplies as several gallons of water sloshed reassuringly in the back of the car. The oil light thankfully didn't come on until I was turning south onto highway 395, and my return trip actually took under half the time of my drive in. The dreaded hike was ultimately a mere hundred feet to a gas station for food. The oil drained from my car for another hour after my arrival, though it took several more for the tow truck to arrive and bring me to my campsite - some distance away, sadly, in nearby Bishop.

Moral of the story? Cars do not like rocks. And, learning sort that I am, I've gotten a bit better at avoiding them since.

[The author thanks The Community Foundation for partially funding this work and Death Valley National Park for their logistical support.]

FERM FUNDING, FLYERS, AND OTHER FUN

We'd like to remind people that FERM does offer small travel awards, both to people who are going on collecting trips and are willing and able to donate research-quality specimens in the ERM, and people who are experts on a group and wish to come curate specimens in the ERM. The awards are intended to cover all expenses, rather than a stipend, and there is a cap of $750. We've had a few collecting awards given out in the last few years, but it's been a while since we've had visiting curators. If you know any taxonomists who might just need a small nudge to swing by UCR and help us out on a poorly-curated part of the collection, please contact either the treasurer (serguei@ucr.edu) or the secretary (dyanega@ucr.edu).

We are also considering having a new FERM flyer (or brochure, or whatever you call it) designed and printed, and we are looking for anyone who has any photos they might be willing to share of a group of FERM members, either on a recent field trip, or at one of the FERM meetings.

Finally, we are interested in knowing how many members might be willing to participate in a springtime Collect-A-Thon some time between April and June of this coming season. The winter rains are pretty encouraging, and we could have good conditions for nice spring bloom this year. If there is enough interest, we will need to select an appropriate local area where we can collect legally for at least 12 hours; suggestions already include Sycamore Canyon Park here in Riverside itself, or Harford Springs County Park a short distance south. Feedback and suggestions (to dyanega@ucr.edu) are definitely welcome!

Thermal Vents, Volcanos, Glaciers, Braided Rivers and Alpine Parrots: A Road Trip in the Land East of Oz

A. J. Mayor

In the Spring of 2011 I began looking for a post retirement adventure. I retired 30 October 2011 from Great Smokey Mountains National Park, and 2 weeks later found myself in a plane over the Pacific on a nearly 18 hr. flight to the Land East of Oz, better known to most of you as New Zealand. My interest was to mount an extended expedition to collect and document beetles in the Family Melyridae. In New Zealand the group is small with only 34 described names, and since the fauna had been ignored, it promised new genera and new species to be discovered.

I was met at the Auckland Airport by a college friend Dan Tasker, and with the logistics help of his wife Michelle, 2 weeks later I had a Nissan Vanette fitted out for camping, and for the next 4 months it was my home away from home.

New Zealand consists of an isolated group of islands located in the South Pacific southwest of Polynesia and southeast of Australia. There are two main islands, North Island and South Island, with hundreds of smaller satellite islands. Because of its isolation, diversity in most insect groups is low, but endemism is very high. All of my research took place on the 2 larger islands, and most of the time I was on the road collecting. On North Island I also had access to the Entomology laboratory of the Landcare Research facility in St. Johns, Auckland, which houses the New Zealand Collection of Arthropods. On South Island Dr. John Marris generously provided me with work space in his lab at Lincoln University near Christchurch.

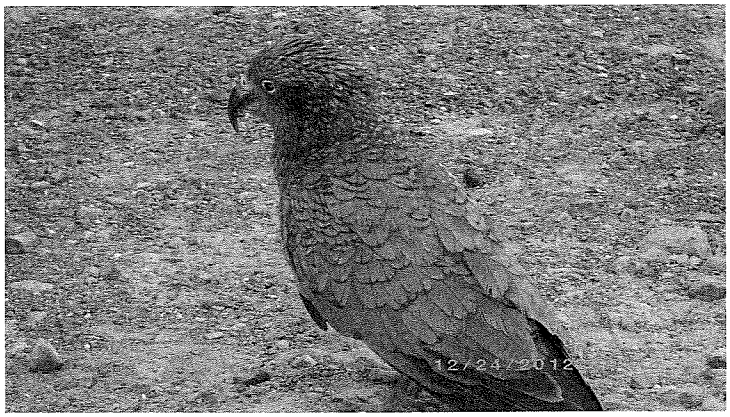
New Zealand has a very diverse geography and topography. On the North Island the landscape ranges from semitropical Kauri forests and sunny sand beaches in the north to "deserts" on the central volcanic plateau, and Southern Beech forests in the mountains to the south. A beautiful and popular area on the North Island is the Waitakere Ranges west of Auckland. The area is regenerating Kauri forest interspersed with spectacular black iron sand beaches. Numerous species of tree ferns and the southern most species of palm trees gives the forest an otherworldly quality. A favorite collecting spot was Karekare Beach (photo at right), which is difficult to access, but has a beautiful beach with vegetated back dunes. Heading south to the middle part of North Island is the central volcanic plateau, with geysers, steam vents, mud pots, volcanos and the "Rangipo Desert", a barren desert-like environment. Remarkably, it gets 59-98 inches of rain a year, so is not strictly a desert!

Thermal Vents, Volcanoes, Glaciers, etc. (ctd.)

However, the volcanic nature of the soil makes much of the moisture unavailable to plants, and the region is dominated by low growing scrub with the Tongariro, Ruapehu, and Ngauruhoe Volcanoes in the background. Most of you probably recognize Ngauruhoe (photo at right) as Mt. Doom from Lord of the Rings.

Traveling south to Wellington, the capital of New Zealand, I arrived at the port area where I had booked ferry passage to the South Island. There are several to choose from, and I found that Interislander was a good choice. With boarding in early morning, the crossing of Cook Strait takes about 3 hours with an arrival at the small town of Picton in the Marlborough Sounds region of South Island.

South Island is as geographically and topographically diverse as the North Island, with habitats ranging from semitropical forests on the west coast to dry desert like intermountain areas, and vast forests of Southern Beech. The South Island is dominated by an extensive range of mountains, the Southern Alps, which stretches from Mount Arthur in the north to the Fiordland Region in the south. Three roads cross over the alps at major passes, Lewis Pass in the northern Buller region, Arthur Pass in Middle Canterbury, and Haast Pass in the southern alps. All of these passes are around 900 meters in elevation which in New Zealand puts them above timberline into subalpine and alpine habitats. Arthur Pass is probably the best known, and with road grades that approach 18% for short distances it can be a very interesting drive, especially approaching from the west coast. At the eastern end, not far from Springfield, Hwy. 73 climbs steeply to 940 meters at Porter's Pass. The road then passes through a very dry intermountain area where rainfall is measured in millimeters. In just a few short miles, as the road approaches the town and pass of Arthurs Pass things take a dramatic change, and here the rainfall is measured in meters!



One of the most remarkable denizens of the southern alps is the Kea, (photo at left) the only parrot to inhabit subalpine and alpine habitats year round. They often work in pairs, one distracting you while the other raids your pack for anything edible. Because they strip the bark off trees for food, they are predisposed to stripping the rubber molding from car windshields, which they appear to enjoy very much, even if unrewarding. Following a two week stay in Christchurch while I worked pinning samples at Lincoln University, I headed south to Mount Cook National Park, one of the most beautiful spots in all of New Zealand. At over 12,000 feet, with hundreds of glaciers, Aoraki (Mt. Cook) is the highest spot in New Zealand, with spectacular views all around. After several days of collecting, I headed south again to Queenstown and Te Anau, the gateway to Fiordland National Park, for several more days of collecting. Heading south again I traveled up a gravel road for miles to reach Borland Saddle at the base of Mount Burns. The spot is interesting because about 10,000 years ago half of Mt. Burns sheared away during an earthquake, dramatically altering the local topography. Again, the collecting was good. Heading north I cross to the west coast at Haast Pass, and headed north past the Fox and Franz Joseph Glaciers. Eventually making my way back to the North Island, and Auckland.

So, from two collecting seasons of 4 and a half months each, 75,000 road kilometers later, a visit to the British museum to examine types, and hundreds of genitalia dissections, the results are 4 new genera, 11 new species, and 15 new synonyms, for a total of 6 genera and 30 species of Melyridae known for New Zealand. Much more field work remains to be done, especially with regard to offshore islands, and the new genus *Zeadasytes*.

Recent Publications by FERM Members

Aguirre, M.B., H. Diaz-Soltero, L.E. Claps, A. Saracho Bottero, **S. Triapitsyn**, E. Hasson & G.A. Logarzo. 2016. Studies on the biology of *Hypogeococcus pungens* (sensu stricto) (Hemiptera: Pseudococcidae) in Argentina to aid the identification of the mealybug pest of Cactaceae in Puerto Rico. Journal of Insect Science 16 (1): 58; 1-7

Aishan, Z., **S.V. Triapitsyn**, M. Xu, N.-q. Lin & H.-y. Hu. 2016. Review of *Cosmocomoidea* (Hymenoptera: Mymaridae) from China, with descriptions of two new species. Zootaxa 4085 (4): 525-535.

Ballmer, G.R. 2015. Chapter 5. Pursued by adrenaline, in pursuit of dopamine. In: L.A. Dyer & M.L. Forsiter (eds), The Lives of Lepidopterists. Spinger Press

Feng, L., Bhanu, B., **Heraty, J.M.** 2016. A software system for automated identification and retrieval of moth images based on wing attributes. Pattern Recognition 51: 225-241

Forero, D. and **Weirauch, C**. 2016. Resin-enabled maternal care is an old evolutionary strategy in New World resin bugs (Hemiptera: Reduviidae). Zoological Journal of the Linnean Society, Early View DOI: 10.1111/zoj.12454

Forthman, M., Chlond, D. and **Weirauch, C**. 2016. Taxonomic monograph of the endemic millipede assassin bug fauna from Madagascar (Heteroptera: Reduviidae: Ectrichodiinae). Bulletin of the American Museum of Natural History 400: 154 pp.

Forthman, M. and **Weirauch, C**. 2016. Phylogenetics and biogeography of the endemic Madagascan millipede assassin bugs (Heteroptera: Reduviidae: Ectrichodiinae). Molecular Phylogenetics and Evolution 100: 219-233

Gordon, E., McFrederick, Q., and **Weirauch, C**. 2016. Phylogenetic evidence for ancient and persistent environmental symbiont reacquisition in Largidae (Hemiptera: Heteroptera). Applied and Environmental Microbiology doi:10.1128/AEM.02114-16

Hash, J.M., Brown, B.V. **Heraty, J.M.** In Press. Host association and biogeographic patterns in the diverse millipede-parasitoid genus *Myriophora* Brown (Diptera: Phoridae). Cladistics

Hash, J.M., Millar, J.G., **Heraty, J.M**., Harwood, J.F. Brown, B.V. In Press. Millipede defensive compounds are a double-edged sword: Natural history of the millipede parasitic genus *Myriophora* (Diptera: Phoridae). Journal of Chemical Ecology

Herreid, J.S. **Heraty, J.M.** 2017. Hitchhikers at the dinner table: exploitation of extrafloral nectaries by a monophyletic group of ant parasitoids (Hymenoptera: Eucharitidae). Systematic Entomology 42, 204–229

Hoey-Chamberlain, R. and **Weirauch, C**. 2016. Two new genera of big-eyed minute litter bugs (Hemiptera: Schizopteridae: Hypselosomatinae) from Brazil and the Caribbean. ZooKeys 640: 79-102

Hu, H.-y. & **S.V. Triapitsyn**. 2016. *Anagrus turpanicus* sp. n. (Hymenoptera: Mymaridae) from China, an egg parasitoid of *Arboridia kakogowana* (Hemiptera: Cicadellidae). Zootaxa 4161 (4): 573-578

Jones, J.M. L., C.H. Pickett, **S.V. Triapitsyn** & M.S. Hoddle. 2016. New host record for *Psyllaephagus pulchellus* (Mercet, 1921) (Hymenoptera, Encyrtidae) as a parasitoid of the olive psyllid, *Euphyllura olivina* (Costa, 1839) (Hemiptera, Liviidae), in Spain. Boletín de la Asociación española de Entomología 40 (1-2): 67-84

Knyshov, A., Leon, S., Hoey-Chamberlain, R. and **Weirauch, C**. 2016. Pegs, Pouches and Spines: systematics and comparative morphology of the New World litter bug genus *Chinannus* Wygodzinsky, 1948. Thomas Say Monographs, Entomological Society of America, Annapolis, MD, 112 pp.

Leon, S. and **Weirauch, C**. 2016. Scratching the surface: taxonomic revision of the subgenus *Schizoptera* (*Odontorhagus*) reveals vast undocumented biodiversity of the largest litter bug genus *Schizoptera* Fieber (Hemiptera: Dipsocoromopha). Zootaxa 4184: 255-284

Leon, S. and **Weirauch, C**. 2016. Small bugs, big changes: taxonomic revision of *Orthorhagus* McAtee and Malloch, 1925 (Heteroptera: Dipsocoromorpha). Neotropical Entomology, doi:10.1007/s13744-016-0408-8

Morse, J.G., P.F. Rugman-Jones, J.B. Woolley, **J.M. Heraty, S.V. Triapitsyn**, R. Hofshi & R. Stouthamer. 2016. Armored scales and their parasitoids on commercial avocados grown in California or imported from Mexico. Journal of Economic Entomology, 109 (5): 2032-2042

Murray, E., **Heraty, J.M.** 2016. Invading Africa: a novel transoceanic dispersal by a New World ant parasitoid. Journal of Biogeography 43, 1750–1761

Russell, K. and **Weirauch, C**. 2016. "Toothbrush" plant bugs and allies: *Protemiris*, gen. nov., a new genus and five new species of Proteaceae-associated Australian Phylinae (Hemiptera: Miridae). In press, Austral Entomology, Early View, DOI: 10.1111/aen.12213

Recent Publications by FERM Members (ctd.)

Torréns, J., **Heraty, J.M.**, Murray, E., Fidalgo, P. 2016. Biology and phylogenetic placement of a new species of *Lasiokapala* Ashmead from Argentina (Hymenoptera: Eucharitidae). Systematic Entomology 41, 596–606

Triapitsyn, S.V. 2016. Chapter 1. Problems regarding taxonomy of some Palaearctic species of *Trichogramma*: background information, recent developments, and approaches to their solution. In: B. Vinson & S. Greenberg (eds), Augmentative biological control using *Trichogramma* spp.: current status and perspectives. Northwest A&F University Press, China

Triapitsyn, S.V. 2016. A new record of the species *Foersterella angusticornis* Hansson, 2016 (Hymenoptera: Tetracampidae) from Russia. Far Eastern Entomologist 321: 22-24

Triapitsyn, S.V. 2016. Review of the Oriental species of the genus *Arescon* Walker, 1846 (Hymenoptera: Mymaridae). Euroasian Entomological Journal 15 (Supplement 1): 137-151

Triapitsyn, S.V. 2016. A new species of *Anagyrus* Howard (Hymenoptera: Encyrtidae) from Puerto Rico (USA), parasitoid of Harrisia cactus mealybug, *Hypogeococcus* sp. (Hemiptera: Pseudococcidae), on *Pilosocereus royenii* (Cactaceae). Dugesiana 23 (1): 27-31

Triapitsyn, S.V., Aguirre, M.B. & Logarzo, G. A. 2016. A new *Anagyrus* (Hymenoptera: Encyrtidae) from Argentina, parasitoid of *Hypogeococcus* sp. (Hemiptera: Pseudococcidae) on *Harrisia pomanensis* (Cactaceae). Zootaxa 4114 (5): 590-594

Walker, A.A., **Weirauch, C.**, Fry, B.G, and King, G.F. 2016. Venoms of heteropteran insects: a treasure trove of diverse pharmacological toolkits. Toxins, 8: 43

Weirauch, C., Forthman, M., Grebennikov, V., Banar, P. 2016. From Eastern Arc Mountains to extreme sexual dimorphism: systematics of the enigmatic assassin bug genus *Xenocaucus* (Hemiptera: Reduviidae: Tribelocephalinae). Organisms Diversity and Evolution. First Online: 16 December 2016. DOI: 10.1007/s13127-016-0314-2

Weirauch, C., Seltmann, K. C., Schuh, R. T., Schwartz, M. D., Johnson, C., Feist, M. A., Soltis, P. 2016. Areas of endemism in the Nearctic: a case study of 1,339 species of Miridae (Insecta: Hemiptera) and their plant hosts. Cladistics, Early View, DOI: 10.1111/cla.12169

Zhang, J., **Gordon, E., Forthman, M.**, Hwang, W.S., Walden, K., Swanson, D., Johnson, K.P., Meier, R., and **Weirauch, C.** 2016. Evolution of the assassin's arms: insights from a phylogeny of combined transcriptomic and ribosomal DNA data (Heteroptera: Reduvioidea). Scientific Reports 6, 22177

Zhang, G., Hart, E. R., and **Weirauch, C.** 2016. A taxonomic monograph of the assassin bug genus *Zelus* Fabricius (Hemiptera: Reduviidae): 70 species based on 11,000 specimens. In press, Biodiversity Data Journal, e8150 (08 Jul 2016)

Zuparko, R.L, **S.V. Triapitsyn** & K.M. Daane. 2016. Neotype designation for *Metaphycus hageni* Daane & Caltagirone, 1999 (Hymenoptera: Encyrtidae). Pan-Pacific Entomologist 92 (2): 119-123

Friends of the Entomology Research Museum
2017 Membership Form

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Friends of the Entomology Research Museum
Department of Entomology
University of California
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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.)

Photo by M.C. Orr ©

Anthophora hololeuca (Hymenoptera: Apidae)

The bee *Anthophora hololeuca* is a small, pale, native desert species that is especially strongly associated with smoke tree (*Psorothamnus*), and both sexes are commonly found in or near these plants in the local deserts through much of the year. They dart around the vegetation, often very low to the ground, where they can be almost invisible against the sand. This photo shows a sleeping male, distinguished from the females by a shaggier face and the lack of any pollen-collecting apparatus on the hind legs. Male bees – with very few exceptions, even in colonial or social species – do not stay in the nest after they emerge as adults. This means the poor little guys are on their own, in terms of finding a place to spend the night. In the families Apidae and Megachilidae, it is common for males to sleep by grasping a leaf or a twig in the mandibles, and clamping in place for the evening, with their legs folded at their sides. All other families of bees, so far as is known, will use their legs for gripping, or wrap their bodies around a twig, but they don't use their jaws this way. Females of various cuckoo bees, which lay their eggs in other bees' nests, also are known to sleep this way.