

Friends of the Entomology Research Museum



Newsletter

Editors: Connell Dunning and Robert Wepler



Mexican Microhymenoptera: Biodiversity at El Edén

by Michael W. Gates

My month-long adventure to the subtropical savannah of the Yucatán Peninsula began in mid-July 1998 when my advisor, John Heraty, was notified that funds had been awarded for a proposed Hymenoptera biodiversity project. This enabled me and a Mexican student to go to Mexico for the entire month of August to sample Hymenoptera. Originally proposed a few months earlier to the UCMEXUS granting agency which is designed to foster cooperation between Mexican and University of California researchers (i.e. Bob Jones in Querétaro, Alejandro Gonzalez in Nuevo Leon and John Heraty at UC-Riverside), this project was funded at the last minute. The proposed work was to be done at the Reserva Ecología El Edén in Quintana Roo, Mexico. The reserve is located 25km NNE of Leona Vicario and consists of lowland, subtropical savannah, primary and secondary forest, and several lagoons. This area is periodically inundated during the fall and winter and is subject to monsoon rains in the summer. The facilities are rustic but completely solar powered, so electricity and hot water were available.

Our objectives were to set up passive insect sampling techniques, including malaise traps and yellow pan traps, in six microhabitats (marsh, lagoon, primary and secondary forest, savannah and the cenote (sinkhole)). Our parataxonologist, Alejandro Blanco, was trained in the techniques of setting up and changing the traps as well as the use of a sweep net. He would be responsible for collecting all samples until the project's termination date in December. All samples were to be sent to the Bob Jones laboratory for processing by two of his students who would be trained on site at a parasitic Hymenoptera workshop run by the Heraty lab in Riverside. The remainder of the time, Gonzalez's student (Rodolfo Rodríguez Ramirez) and I collected using sweep nets during the day and mercury vapor lights at night. By the end of the first week, we had all of the traps set up and the sampling protocol in place so that we only spent about three days per week collecting and

processing trap samples. For sweep samples, the savannah and lagoon areas were not particularly productive for microhymenoptera, so we usually focused on the primary and secondary forest regions.

A typical day collecting sweep samples began at 8:30AM when we would depart the main kitchen/living building after breakfast and either walk down the road through secondary forest to the greenhouse (where a lot of the

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Program Announcement

"Rearing Insects in Brazil"

by Doug Yanega

Friday, 23 April 1999, 7:00 pm
Museum Classroom

Dr. Douglas Yanega, our new Senior Museum Scientist, will give a narrated slide presentation on some of his insect rearing adventures while in Brazil for over two years. In addition to enjoying Doug's presentation on this interesting and colorful topic, this will be an excellent opportunity for FERM members to meet and get to know Doug, who began work in the Museum in February.

Doug did his undergraduate work at Cornell University and began a project there on sweat bees that evolved into his PhD research. He completed this research at the University of Kansas under the guidance of the well-known bee systematist, Charles D. Michener. Doug was a postdoctoral fellow at the Illinois Natural History Survey, followed by over two years as a visiting researcher in Brazil (just before coming to UCR). He has curated bees and other insects as a visiting scientist at several entomological museums throughout the world. His specialty is bees, but he also works on various groups of Coleoptera, Diptera, and Lepidoptera. He enjoys field work, natural history, taxonomy, and interacting with fellow scientists and the public.

Refreshments will be provided.



TIPS FOR TEACHERS



by Marcella Waggoner



Welcome! This is the first in a series of enclosures to the FERM newsletter with information directed towards classroom teachers. We hope you find this information useful and that you will let us know if "Tips for Teachers" is a feature you would like to see as a permanent part of the FERM newsletter. Our goal in "Tips for Teachers" is to provide ideas for class projects and experiments, sources for equipment and supplies, and information about other education materials that will inspire you to integrate insects into your curriculum. In this issue, we are highlighting some especially buggy web sites.

Educational Outreach TAMU

Our feature web site is the Educational Outreach site maintained by Texas A & M University. They can be accessed at the following address (<http://ento35nt2.tamu.edu/youth/>) or by searching for Educational Outreach TAMU. This site includes lesson plans, suggested reading and reference materials, equipment and supplies, sources for live insects, student experiments, competitions and contests, 4-H and Boy Scout projects and other buggy web links.

Another great offering from TAMU is a course designed for teachers: check them out at:
<http://entowww.tamu.edu/academic/courses/ento489/>



Amazing Insects

This site is maintained by Groveland Elementary School in Minnetonka, Minnesota. Amazing Insects at (<http://www.minnetonka.k12.mn.us/schools/groveland/insect.proj/insects.html>) is a great site aimed toward the youngest insect fans. Resources include: insect songs, poems, art projects and a real science activity using catch and release techniques. Results of projects from previous investigations by students are also available. In addition, there are links to other insect related web sites.

The Insect Review

Another insect site is operated by the Philadelphia Insectarium. The web address for the Insect Review is (<http://www.insectarium.com/review.htm>). This site features a "bug store" with insect science quest kits and classroom aids, experiment kits, videos, posters, games and more. The "facts" page has answer to questions like why bees dance and how strong is an ant. Most of the other features are related to activities and attractions at the museum itself.

Other web sites with insect stuff:

Hands-on Science Centers Worldwide

<http://www.cs.cmu.edu/~mwm/sci.html>

Entomology on W.W.Web

http://www.colostate.edu/Depts/Entomology/www_sites.html

Entomological Society of America kids page

<http://www.entsoc.org/>

Feedback wanted: To let us know if you like the Tips for Teachers page or if you want to share ideas for future pages, contact Marcella Waggoner (marcella@ucr.edu).



FERM News Briefs

We had our first Friends' Annual Meeting on January 29th, 1999, and it was a great success! About 60 members attended, and we enjoyed a fantastic assortment of appetizers and baked goodies prepared by Cecilia "Cissy" Pierce (thanks Cissy!), the President's and Treasurers reports (we're doing great, and have over 100 members!), and Dave Hawks' featured presentation on "Plusiotis Beetles, Gems of the Neotropics". Thanks also to James Barry and Bob Van Patten who help with preparations, and to the several people who donated door prizes which added to the festivities.



On the weekend of February 19-21, thirteen members of FERM participated in our first trip to the Desert Studies Center (part of the California State University System) at Zzyzx in the eastern Mojave Desert near Baker. Thanks to Marcella Waggoner's assistance, we have an arrangement with the Desert Studies Center to prepare an arthropod inventory for the mutual benefit of the Center and the UCR Entomology Research Museum. The arthropod collecting was only marginally successful due to the early date and lack of rain, but the facilities are excellent, the surrounding habitat is very interesting, and we had a great time. Highlights were Marcella's excellent breakfasts and "Mojave Bugs" slide show, and Greg Ballmer's homemade Thai dinner on Saturday night. Don't worry we'll be going back!



The FERM's first major purchase for the Museum, an excellent Zeiss SV 6 Stereo Microscope and fiber optics illuminator, has arrived! It is available on a sign-up basis to all visitors to the Museum, and we hope it will be especially valuable to students and visiting scientists who have had to use lower quality scopes in the past. Congratulations to all members of FERM for making this possible! In the near future, we plan to attach to the base a small inscribed plaque indicating that this scope is a donation by the Friends of the Entomology Research Museum.

Payroll Deduction: Just in case you were curious, if you are a UCR employee, you can pay your annual dues to FERM with monthly deductions from your paycheck. This can be set up by Lisa in the UCR Development Office (x3486). Because of the paperwork involved, they request the minimum deduction to be \$5 per month (which would come out to minimum \$60 a year) and deductions should be in dollar amounts (not like \$6.13 each month, sheesh, c'mon you guys!). And besides, realistically you probably would spend the money on a 6-pack of RC Cola and a box of Hostess Ho-ho's. So if you wanna do the monthly deduction thingee, whoop, there it is.

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controlled burn/regrowth studies were conducted) or in the other direction to the primary forest. The difference in these two areas consisted mainly of the height of the canopy (30-40' in primary and 15-20' in secondary), the extensiveness of the understory (sparse in primary, denser in secondary) and differences in species composition in each habitat. Usually, temperatures reached 90°F and 85% RH by 10AM, so we were typically saturated with sweat by then.

However, we were compensated by the incredible collecting as we caught 16 of 20 families of Chalcidoidea by week two, often 300-400 specimens aspirated per day. Particularly exciting were the robust, orange chalcids in the genus *Comura* that have expanded, dentate hind femora or the unusual eucharitid ant parasites in the genus *Kapala* with their long, pointed scutellar spines or the diabolical eurytomid *Axioma* with its horns on its forehead. The butterflies were also quite abundant and used the road as a "flyway". Often, 50-60 individuals of several of the pierid species could be seen puddling at muddy areas along the road, particularly after a good rain. Additionally, countless day-flying moths, skippers, hairstreaks, swallowtails and nymphalids commonly flew along the roads and trails. Perhaps the most magnificent of all were the giant blue Morphos that were commonly seen but rarely collected due to their strong, erratic flight. However, a rotting watermelon served us well and attracted ~10 specimens that we were able to collect over the course of 3 days. In fact, I was able to approach one so closely as to see the pink watermelon juice being sucked up its proboscis!

By lunch time, we returned to the kitchen to eat and take a one hour siesta. I would often entertain myself by trying to annihilate as many horse flies as possible as they tried to obtain a blood meal. After this, I usually wrung out several ounces of moisture from my shirt (and sometimes my shorts) and changed to a dry one for the afternoon collecting. Often, we would go to the primary forest after lunch because it took it that long for the foliage to dry sufficiently for effective sweeping. Here we collected more of the Ichneumonidae and pteromalid chalcids associated with hosts in the rotting vegetation and logs on the forest floor. But we did get some metallic green *Phaenax* dung beetles and a few giant Morphos feeding on rotting berries. We usually finished by 4:00PM and returned to the kitchen to await supper and process samples. By this time, massive thunderheads were rolling in with their sometimes torrential downpours, thunder and lightning. It was truly awe-inspiring to watch this process from the 40' observation tower.

Most nights we set up a mercury vapor light in the 40' observation tower attached to the kitchen amid the cacophony of 15 species of frogs and toads. It was quite productive for much of the macro insect fauna, mostly moths, although it did attract many beetles, aquatic Heteroptera and a few Hymenoptera. We would often play

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Book and Reprint Recycling

by Rick Vetter

From the inaugural book sale at the 1st annual meeting, an amount of \$97 was generated for FERM coffers! Most touchingly, all UC Pubs in Entomology found loving homes. At the next meeting, if any new books are donated (Ted Fisher has approached me about donating some of his library), they will be on display for sale (after the museum gets first dibs).

Upcoming Book Auction!!

At the April meeting/seminar, on display for auction will be An Introduction to Entomology by John Henry Comstock, 1924, 3rd edition, First Complete Edition. The book was property of Gordon Floyd Ferris, Stanford scale entomologist and has the following inscription: "To G. F. Ferris, with the compliments of J. H. Comstock". To honestly inform you of the book's condition, the cover is worn (it did service in the Stanford library), there is a tear which extends 2 inches on the middle of the back spine of the binder and about 3/4" toward the front, the embossed title is only readable when held at an angle, there is one loose page and the inner binding is slightly damaged.

How the auction will be held. The book will be on display at the April meeting. I will start accepting bids at the meeting and for up to 2 weeks to the date after the meeting. A minimum bid will be set based on archival market price of an unsigned copy. I will take the 5 highest bids and then inform these folks of the bid values but not the identities of the finalists so all will know where in the pack they sit. I will then accept one more final bid from each of the 5 finalists for 2 more weeks. Finalists may bid at the same value of their first bid or higher but not lower. Unless I am notified of an absence, I will assume silence means disinterest. The winner will then be decided. As a matter of strategy, I would highly suggest that some odd-value bids be made (such as \$102.54 rather than just \$100). I can easily see several folks submitting the same round number bid and you wouldn't want to lose out because I am forced to draw names out of a hat to pick the winner.

Bids may be submitted by phone (909-787-3550), fax (909-787-3086), or email (vetter@citrus.ucr.edu). When you bid, make sure you leave me your name, a method of contacting you (phone, FAX, email) and let me know if you plan to be unreachable in the 4 week period after the meeting.



MUSEUM NEWS

by Serguei Triapitsyn

It is my pleasure to announce that Dr. Douglas (Doug) Yanega assumed the responsibilities of the Senior Museum Scientist effective 22 February 1999. I am looking forward working with Doug towards our goal -- improving and augmenting museum's collection. Doug will be curating collections of all groups of insects except for parasitic Hymenoptera. Doug's office is Room 105A, Entomology Research Museum building. He can be reached via email (doug.yanega@ucr.edu) or phone (909-787-4315).

There have been at least two notable acquisitions of material recently. First, the Raymond M. Alf Museum of Paleontology donated the entire Meyer collection of insects to the Entomology Research Museum. Part of this collection (presently in 24 insect drawers in 2 cabinets, specimens from Brazil, Peru, Pakistan, and the US) will be integrated with the general collection in our museum, thus adding to its diversity. Unlabeled specimens may be used for teaching and display purposes. Second, Dr. John Heraty donated several drawers full of beautifully mounted and labeled parasitic Hymenoptera from all over the world, a very welcome addition to museum's collection.



If Martha Stewart were an Entomologist.....

by Rick Vetter

Just what do you do with those old empty rectangular clear plastic Tic-Tac® boxes after you have freshened your breath to social acceptability? Why, you can use them for storing insect pins. Designate one box per pin size and write the number on the lid. No more loose pins and you can see when supplies are low. Get several and put a rubber band around them to hold them all together in one nifty, efficient compact unit. Entomology has never been this much fun!



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cards or Chinese checkers in between shifts checking the light. Although we sometimes had a few beers, these were usually hoarded greedily as we were only re-supplied once per week. Additionally, we would use our portable generator to sample nocturnal insects in the primary or secondary forest and the savannah, but lugging a 50 lb. generator limited our range.

By the end of the month, all of our samples were stored with the director of El Edén, Marco Lazcano, until the export permits came through and the material could be shipped to the Bob Jones laboratory in Querétaro. All of the samples collected in August would then be hand-carried by Jones' students when they came up for the week-long parasitic Hymenoptera workshop in Riverside.