University of California, Riverside

No. 16, Fall 2002

Friends of the Entomology Research Museum

Newsletter

Editor: Rick Vetter Proofing Editors: G. Ballmer, D. Hawks, D. Yanega

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President : Greg Ballmer
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Secretary: Dale Powell
E-mails:
ballmer@citrus.ucr.edu, jergeorge@hotmail.com
david.hawks@ucr.edu, pseudococci@email.msn.com

FERM MOVING DAY

We plan to have a FERM Moving Day party on December 7th, to bring drawers of specimens back from storage and place them in their new home. If you are interested in helping, please contact Doug Yanega either by e-mail (dyanega@pop.ucr.edu) or by phone (909-787-4315). We expect to make a day of it starting at 9:00 AM, and FERM will be providing a pizza lunch and beverages. Hopefully by the next newsletter, we'll be all settled in, and able to celebrate our Grand Re-Opening for the FERM Annual Meeting in January or February!

The FERM Newsletter is published quarterly and contains articles written by FERM members. If you would like to submit an article, please send it as a Word/Wordperfect 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:

Rick Vetter (vetter@citrus.ucr.edu)

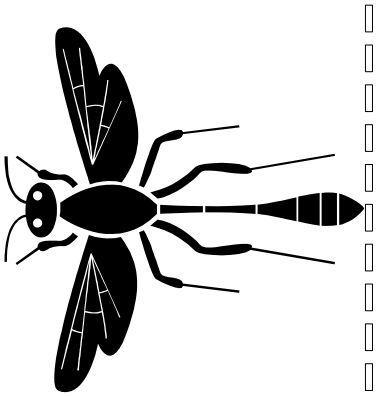
Southern California Yellowjacket Survey -Rick Vetter

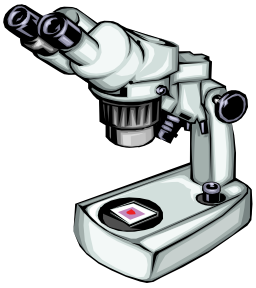
Dear FERM folks,

I am currently starting a 3-year study that will attempt to determine the distribution of the German yellowjacket (YJ) in the LA Basin and hope to develop some control strategies. However, because we have both the native western YJ and the non-native German YJ, it must first be determined where each species lives because there are species differences as far as nesting preferences, baits to which they are attracted and most importantly, the preferred protein sources which will be used to bait for controlling them. The unpublished consensus is that the German YJ is much more common in the flatlands and the western is more common around foothills. I have been collecting many German YJs around Anaheim, Fullerton etc. and many western YJs in Riverside and Redlands. I need as many net swingers out there as possible. I would like to get data for the rest of the year as YJ should be flying till about Xmas. Please net them and send them to me along with the collection data. Address would be good, and better than city alone because we are trying to correlate habitat with species. For example, a collection label with "Riverside" doesn't tell you much because it could be up against the Box Springs Mts. which would probably be the western YJ whereas down in La Sierra, it might be the German YJ.

Please send wasps and collection data to me at:

Rick Vetter 909-787-3550
Entomology vetter@citrus.ucr.edu
UC Riverside
Riverside, CA 925212





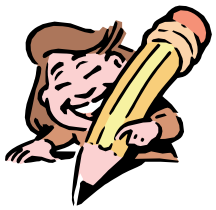
NEWS FROM THE MUSEUM

by Doug Yanega

This past quarter has mostly been devoted to preparations for the Museum's renovation, although various other activities are progressing, albeit slowly, such as the Museum database, which now has over 46,000 specimen records and an authority file of over 85,000 species.

We've moved a fair bit of equipment out, some of it going elsewhere in the Entomology Department permanently, but most of it has gone to the old Entomology building for temporary storage. We're especially grateful to several FERM members who helped during a series of Thursday night moving sessions, transferring over 50 cabinets into storage! The remaining 3/4ths of the collection was moved October 15th and 16th by professional movers, then the compactor installation began on October 22nd. Installation is now complete, with only a few minor adjustments yet to be made. Come by the Museum anytime to see the compactors—they're very nice!

Got an idea for a FERM article???



Do you have anything buggy-related that might be of interest for the FERM newsletter? We really would be tickled pinkish if you would send "stuff" in. Remember, this newsletter won't have much in it unless we have material submitted from you folks that we can publish. Feel free to send in photos, articles, recent publications related to insect taxonomy or natural history and even stories about how the Entomology Research Museum has assisted you in your bug-related endeavors. Send them to vetter@citrus.ucr.edu, preferably as attachments (not in email text). Additional information is on the front page of this newsletter.

*****Deadline for submission of material is Dec 31st*****

Friends of the Entomology Research Museum Membership Form

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Submit your membership form and dues to:

David C. Hawks, Treasurer
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Department of Entomology - 041
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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.)

On the Road to China Lake

by Gordon Pratt

On the evening of June 28, 2002, Daniel and Zac Porcu, Gordon Pratt, Cecilia Pierce, Greg Ballmer, Mike Raschko, and Dale and Jun Rong Powell all met at the Bangkok House in downtown Ridgecrest. We ate a wonderful Thai dinner before entering the Range at China Lake Naval Air Weapons Station. I have a contract to examine arthropod diversity at springs within China Lake Naval Base; there may be more than a hundred springs scattered throughout the base. China Lake is composed of two parts called the North and South ranges. Each of these is a large area covering over a thousand square miles. The elevations of the North Range (where we went), rises from as low as 2,000 to nearly 9,000 feet in elevation.

Just before nightfall we arrived at our destination, New House Springs, at a little over 6,000 feet elevation on the west side of the Argus Mountains, where we set up our campsites and the mercury vapor lights. On route, everywhere we looked, it was extremely dry from the lack of rain. Very few plants showed signs of growth and the only ones that did were ones in association with springs. As the sun set in the west, Greg Ballmer saw ascalaphids (owlflies) zipping back and forth in the dimming light and snagged one. As the evening progressed it turned out to be an exceptional night for Neuroptera. In addition to the ascalaphid, we collected a berothid (beaded lacewing) species, a couple of species of mantispids (mantidflies), many myrmeleontids (antlions), a number of chrysopids (green lacewings) (probably containing the new species identified by Norm Penny), several coniopterygids (dusty wings), and a few hemerobiids (brown lacewings). Numerous other insects including wasps, flies, beetles, and moths were also collected at the lights.

The following morning (June 29), after some collecting of insects and butterflies around the spring, we headed west to the Coso Mountains to collect a *Hemileuca* species (buckmoth) with pheromone lures on some flats just south of Coso Peak. We gave up after waiting for an hour and headed off to the springs on the west side of Silver Peak. We got to them by hiking down slope several miles from a road just to the north of Silver Peak. While in the area some of us went to the only known pictograph found on base. Although petrogliphs are common, no pictographs were previously recorded from base. This painting discovered by Ken Osborne, while he was napping during a previous FERM trip, was found on a granitic rock ceiling along a sandy wash. After spending a few hours around the springs we hiked back. The hike back was a little harder than the hike down had been.

That evening we went to Coso Bridge just southwest of Coso Peak at around 7,500 feet elevation. As the sun was setting, prediapause larvae of the rather-rare butterfly *Polydryas arachne* were observed feeding upon a few *Penstemon speciosa* plants and were collected.

Cissy had prepared a pasta salad with a peanut sauce and a grilled chicken dish, while Greg Ballmer brought corn, the Porcus brought buttered bread, which we cooked over the grill, and the Powells brought fried rice and fruit. Cissy also had several desserts to go with the meal including a raspberry cream parfait, fruit, juice and cookies. The Powells brought extra fruit. So we ate well, as usual.

That evening we set up mercury vapor lights and campsites. Coso Bridge is the location where I had found a new *Polyphylla* species (scarab beetle) a couple of years back and hoped to collect a few more that night. According to Art Evans, the Coso Mountains has four or five new scarab species, so it could be considered an area of high endemicity. Unfortunately we only collected one of the new *Polyphylla* species, while we collected many of the more common widespread species, *Polyphylla decemlineata*.

Sunday morning (June 30) we went to Mill Spring just to the southeast of Coso Peak. This spring is unusual because its elevation is over 7,000 feet. Numerous insects were collected and the interesting and rare observation was made that butterflies and many other insects were nectaring on the wild roses. This year many flowering plants did not bloom, so these plants were potentially important nectar sources for many insects since they were not as dehydrated as other nectar plants.

That afternoon while driving to the main entrance, we stopped at the main petroglyph area found on base, called Little Petroglyph Canyon. The day was warm but becoming cooler with the setting sun. Most of us walked the canyon observing the drawings made by Indians over the thousands of years. The drawings in this region are extremely complex and varied. From there we headed home.

On the Road to Honduras

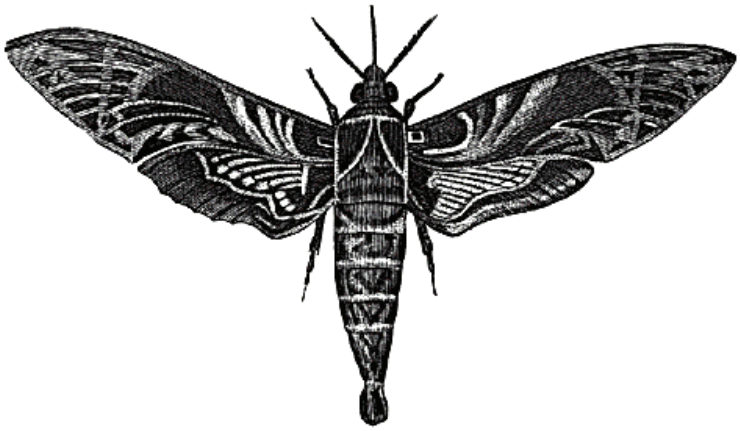
by Matthew Van Dam

On July 1, 2002 my brother, Alex, Doug Yanega, and I set off for Honduras. We departed on a flight that left at 1:00 am from LAX, after braving the usual long lines and boring wait to board the plane. The flight was smooth and we arrived at Tegucigalpa at 9:00 am that morning. The air was warm, fresh and clean but, surprisingly, not oppressively humid. After a short wait we were greeted by Julio, our friend and guide from Zamorano (the main university in Honduras), converted $100 to about 3000 Lempiras, Honduran currency, and were then off to Zamorano, snaking our way through Tegucigalpa which is a rather hilly city. The strange thing about Honduran roads is that there are no designations for lanes, so traffic is constantly crossing over into opposing traffic. Also, there are almost no road signs, so you just have to sort of know where you are going. On the way we passed through several types of habitats, most of which was secondary growth, dominant of pines. This is a rather poor habitat with not much insect life in it, being that it is primarily re-growth from farming. The other habitat is a more scrubby lowland mesquite thicket. Arriving at Zamorano, we checked into a hotel and then we were able to go out collecting. The best collecting was off of some ornamental bushes that were in bloom around the hotel. Later on, at lunch, we met up with Andrew Smith and Federico Ocampo from the University of Nebraska who were doing a scarab survey. We also met up with Dr. Ron Cave, who worked at Zamorano, and asked him what he thought were the most interesting places for collecting at this time of year. With the help of his input, we made our plan of attack. That night we would collect at Uyuca, a small chunk of tropical forest near the university. Then we would go try some lowland tropical deciduous forest at Boqueron National Monument, and continue east to Montaña del Malacate to visit some tropical forest where the jewel scarab, *Chrysina bruyeai,* has been collected. Finally, for the last three days we would stay at La Muralla which is at the high elevation of almost 4000 feet.

Later that evening, according to plan, we set out for Uyuca in our cramped Jeep Cherokee that had a cracked windshield, which was better than the other Zamorano Jeep where the hood would fly up. It was a very steep ride to the top but fortunately it was not muddy. Along the way we could see many tropical plants, including all sorts of epiphytes. There, at the top, is a field behind which is a jungle. The collecting was sort of slow here, although there were *Rothschildia* saturniid moths amongst others. It was an exciting first night but a short one because we decided to return back to the hotel to get a good night's rest.

The next day, after lunch, we set off for Boqueron. It was a long drive east and the only real obstacle was Hugucigalpa, a very large city. It had experienced some flooding and so the main bridge was washed out as well as some of the roads. One road had a 4-foot deep pothole across it. After making our way out of the city it was not long before we got to Boqueron. After getting permission to enter we drove into the forest. The road crossed a large but relatively shallow stream about five times, and we passed by some majestic rock walls and lush green canyon sides. On that road we almost got stuck in a large drop-off that nearly tipped the Jeep on its side; We only had three wheels on the ground. This ditch was overgrown by vegetation because no one had used the road in a long time. Luckily, Ron, who was driving, is a good driver and when Alex, Doug, and I got out of the car, the Jeep was able to escape. However, the road ended shortly after and by this time it was just before dark. We were not the only ones there, though. There was a small village called La Vispa probably a couple of miles away where some coffee is grown. We were greeted by a couple of curious young men traveling from the village. It is interesting to know that there are trails that lead up into the mountains a bit farther. No one has ever collected up in those mountains, which are some of the tallest in Honduras. It rained most of the afternoon and evening and in periods throughout the night. Although this could have dampened the collecting, the collecting was actually great. There were lots of big, weird moths. Unfortunately, we arrived after the peak of activity for nocturnal scarabs and there were very few cerambycids. The rainy season rain had come earlier than expected and so we missed the main flight of beetles.

In the morning we were greeted by a cacophony of birdcalls. We were able to see Trogons and Mot Mots. The day collecting here was very interesting, and it turned out to be the most abundant place for Orchid Bees, than anywhere else on the trip. It was really interesting to watch the bees come into the scents that we put out for them, such as wintergreen clove oil and Eucalyptus. We caught some of them at mud puddles. I saw a *Morpho* butterfly but much to my dismay I could not catch it. We were also able to capture lots of other great arthropods, like a giant damselfly that had about a 7-inch long abdomen and creamy yellow wing tips. These insects look surreal in flight. I found out that these giant damselflies pluck spiders right out of their webs and eat them mid-flight. Amongst the arthropods, we also saw some giant orb-weaving spiders. Finally we had to leave this spot but we were off to Malacate by midmorning.

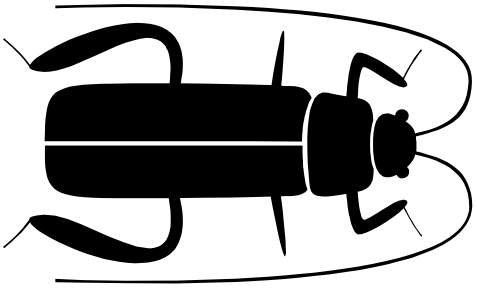


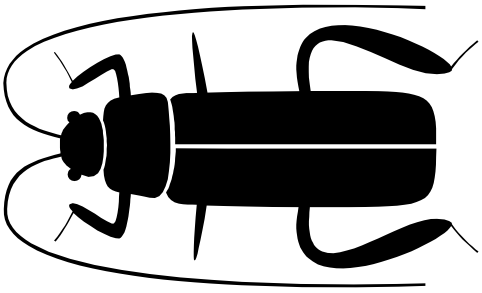
It was a long drive to Malacate through the hilly countryside. Out this far east it is sort of like the frontier of Honduras on the edge of a large and unexplored jungle along the Mosquito Coast. There were no large cities, just small rural villages, if that. Here we went about half way up one of the larger mountains where at the top there is some cloud forest. A lot of this mountain is deforested due to the agriculture. We arrived with enough time before dark to set up a tent so we could get some sleep, having gotten none on the previous night. This night turned out to be "The Night of the Arctiids" as there were many of these colorful moths at our black-lighting sheet. I additionally rank this spot as being the best for biting insects and ticks. Here we observed some of the largest female simuliids, some almost a centimeter long. There were also ceratopogonids, mosquitoes, several nasty ant species that crowded around the sheets, and two species of *Apoica*, a nasty nocturnal vespid wasp that will sting sometimes for no apparent reason. And these little jerks hurt really bad too. We were all stung several times that night. There were some spectacular beetles here such as the Harlequin beetle. The males of this cerambycid have spectacular forelegs that when outstretched can almost be eight inches across. Another beetle with large legs that we caught was a beautiful yellow *Macropoides*, which are about an inch and a half long and the males have huge hind tibiae and femora. A different, bizarre beetle was what we named the "flying sausage". These beetles are black to brown, elongate and cylindrical about 2 inches long. They have nubs for elytra and roll their wings, so they must be primitive beasts. They are quite comical in appearance nevertheless they are rather good fliers. A final, startling beetle was the bioluminescent elaterid, *Pyrophorus*. This beetle has two bright glowing dots on the posterior margins of the pronotum. They are probably used to startle a predator because they glow intensely when these beetles are handled.

The next three days we spent at La Muralla National Park, a mountainous reserve that boasts some of the most beautiful rainforest we saw in Honduras. It was a long drive there but was worth it. Once there we stayed in a lodge where there were three beds. Doug, Alex and I did not sleep during the night in the fear of missing some of the spectacular insects. For example, there were katydids that mimicked tarantula hawks with black bodies and orange wings and antennae. Additionally, there were some *Chrysina cavei*, spectacular beetles that are green with orange and steel blue legs. The males have greatly enlarged hind femora that they use in fighting. Also, a good number of large dynastine scarabs were collected here such as *Heterogomphus*. In one species, males have large cephalic horns, and although the first night they came in huge numbers, most were females which lack the huge horns. Another species had very punctate elytra and the males have three large pronotal horns and one huge spike of a cephalic horn. Other bizarre insects that we saw were the nocturnal walking sticks. They were aposematically colored with large, fat black bodies and orange antenna, rightly so because they shoot out a toxic and bad smelling white ooze. Other phasmids we encountered were lichen- and bark-mimics, whose bodies were edged in a green-gray phalange of cuticle. Other kinds of lichen-mimics were the oddly colored moths and some katydids that have sharp projections coming off the pronotum and very spiny legs. One thing we noticed is that every night there was a different mix of insects, some of which we had seen the night before and others that we had not.

During the day, the collecting was not so good because most of the insects were up in the canopy while we were on the ground. However, the insects we did see were quite interesting. For example, there were these damselflies that appeared in slow-moving shady streams that had pushing matches in mid air. Two males would face off and then push on one another trying to force the other back. They are very beautiful insects with black and turquoise bodies and black wing tips. That final morning we were greeted by the sounds of the huge flocks of green parrots and other mysterious birdcalls. We packed and left for Zamorano.

We got to Zamorano in the evening and enjoyed the ability to sleep in an actual bed, opposed to the hardwood floor of the cabins at La Muralla. The last day we left for the airport at around noon, on the way picked up a malaise trap that we had left at Uyuca and caught our flight at 5:00 pm. It was a smooth flight back and I only wished we could have spent more time exploring other places in Honduras. But it was probably good that we left, considering that we packed a suitcase full of insects.





PINE : PARTNERS IN NATURE EDUCATION

FERM members are entitled to 20% discounts* on the following UCR Extension field nature study courses:

Field Study of the San Andreas Fault: San Bernardino to Mecca Hills
$95 (22N24) [Sat. 8 am- 6 pm, Dec. 7]

A Field Study of Birds: Winter $185 (23P23)
[Tue. 7:30-9:30 pm, Jan. 7. Field trips all day Sat. Jan. 11, 18, 25, Feb. 8, 22]

Field Study of the San Andreas Fault: San Bernardino to Mecca Hills
$95 (23N24) [Sat. 8 am-6 pm, Feb. 1]

Geology and Natural History of Death Valley $150 (23N35)
[Sat. 9 am-6 pm, Mar. 8/Sun. 8 am-4 pm, Mar. 9]

Flora of Joshua Tree National Park [Enroll through The Desert Institute: 760-367-5535]
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[Fri. 5-9 pm, Mar. 28/Sat., Sun 8 am-5 pm, Mar. 29, 30]

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Geology and Natural History of the Eastern Sierra $150 (24N22)
[Sat., Sun. 8 am-5 pm, Apr. 12, 13]

A Field Study of Birds: Spring $185 (24P23)
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Natural and Cultural History of the Mojave National Preserve:
Soda Lake to Kelso Dunes -- The Low Country $265 (24N32)
[Fri. 8-10 pm, Apr. 25/Sat. 9 am-5 pm, Apr. 26/Sun. 9 am-3 pm, Apr. 27]

Birds of Joshua Tree National Park [Enroll through The Desert Institute: 760-367-5535]
[Fri. 6-8 pm, Apr. 25/Sat. 7 am-4 pm, Apr. 26/Sun. 7 am-noon, Apr. 27]

For current listing of courses at any time, bookmark
www.unex.ucr.edu/ns/fns1/classes in your web browser.
For further information, contact: Natural Sciences UCR Extension 909.787.5804 909.787.2456 (fax)
*some restrictions apply

RECENT PUBLICATIONS BY FERM MEMBERS:

Triapitsyn, S. V. 2002. [Species of the genus *Alaptus* Westwood (Hymenoptera, Mymaridae) reared from psocid eggs (Psocoptera) by V. N. Vishnyakova (Gorlova) in Russia and Byelorussia]. Entomologicheskoye Obozrenie 81 (1): 215-217. [In Russian.]

Triapitsyn, S. V. & **V. V. Berezovskiy.** 2002. Review of the Mymaridae (Hymenoptera, Chalcidoidea) of Primorskii Krai: genera *Anagroidea* Girault and *Eubroncus* Yoshimoto, Kozlov et Trjapitzin. Far Eastern Entomologist 114: 1-17.

Trjapitzin, V. A. & **S. V. Triapitsyn**. 2002. A new species of *Neoplatycerus* (Hymenoptera: Encyrtidae) from Egypt, parasitoid of the vine mealybug, *Planococcus ficus* (Homoptera: Pseudococcidae). Entomological News 113 (3): 203-210.

Systems of Systematic Collections

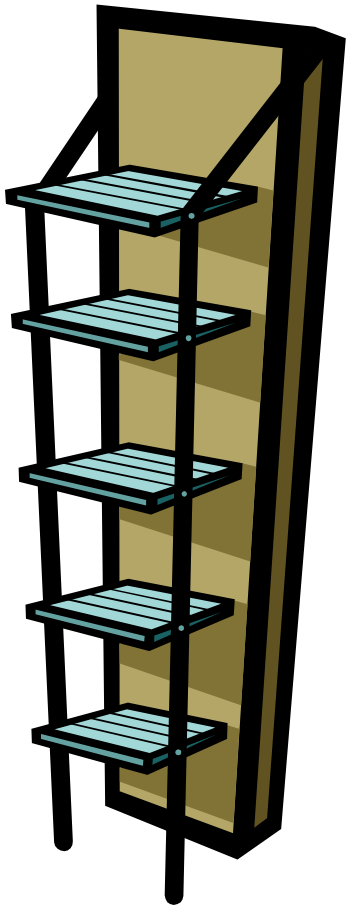
by John Luhman, Minnesota Department of Agriculture

An important decision being faced by many museum managers when facilities are upgraded is how to organize the collection. Should collections be arranged phylogenetically, strictly alphabetically, or partially so (e.g., at superfamily or family level)? Often the justification given for the seemingly simplest arrangement is for convenience of location or accession of specimens in connection with loans. However, I have found that there are advantages and disadvantages for any of the systems. Perhaps we need to ask who uses museum collections the most, and how collections are actually used. If primarily specialists are using collections, and collections are used primarily in taxonomic research or identification, then a broader, perhaps more scientific system of arranging insect collections is warranted. A collection arrangement needs to be both "user friendly" as well as "user-useful" (my word).

Many older collections are arranged phylogenetically according to some authoritative catalog. Although advantageous in trying to identify a specimen, it is difficult to find a known subfamily, tribe, let alone genus or species because nothing is in alphabetical order (Hodge's Lepidoptera catalog, or Leng's Coleoptera catalog for examples).

Small collections or small families are often in straight alphabetical order by genus, then species. This works fine when only a few drawers are involved. It is practical for small collections because they are missing so many of the groups within the families represented. Often small collections are used for teaching purposes or special displays in which classification below family is not important.

In large, institutional collections, strict alphabetical arrangement has several disadvantages that offset the obvious advantage of quick location and accession. In very large and complex groups like Ichneumonidae, Carabidae, Braconidae, Curculionidae, and Tachinidae, subfamilies and occasionally tribes are useful in arranging specimens in the collection. In several of these groups, certain sub-taxa have been at family rank on and off even today. Often rare or unusual groups are "lost" to view when sunk into a sea of alphabet soup. Some generic names are disputed, so that over time the same species may be represented two or more times within the same family, but not noticed because letters of the alphabet separate them. Then there is the problem of major name changes which can greatly disrupt drawer arrangement. In recent years in the Ichneumonidae, several speciose genera had name changes: *Itamoplex* reverted to *Cryptus*, and *Ichneumon* to *Coelichneumon*, while *Pterocormus* went back to *Ichneumon*. With the use of sub-groupings or super-groupings, at least related species would remain together.



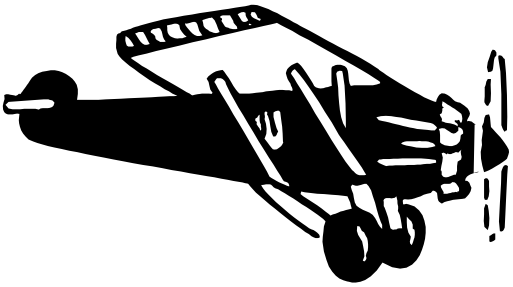
One objection to using any levels of classification below family is that classifications keep changing. What is overlooked is that even the definition of families these days is being constantly eroded in many groups by nearly annual changes in splitting or lumping of families. Museums can determine which classification(s) to use in grouping, for example, superfamily, then family, then subfamily for bigger groups, so that at least the location of the species in that group will be the same regardless of the definition of the group, or its name change (in the alphabet). For very unstable groups, rare or unusual groups placed in "self-contained" subfamilies or tribes, they could be placed separately within a family, even if the rest of the taxa are alphabetically placed. A specialist in that group will always know what that group would be.

What is apparent to me is that for complete functionality, the arrangement of a museum insect collection has to be a combination of systems, depending on each group's complexity. Perhaps only genera and species should always be alphabetical (I won't address the problem of subgenera). Subfamilies are useful in grouping large families such as Cerambycidae, Ichneumonidae, and Carabidae, reducing disruption when genera are split, or new ones described. Family arrangement will vary from order to order. In Lepidoptera, alphabetizing families without regard to superfamilies would drown micro-leps in between behemoth groups. Suborders are useful in Odonata, Diptera, Coleoptera and Hymenoptera. Using Hemiptera without distinguishing Heteroptera and Homoptera would result in an unwieldy hodge-podge of families. Some decisions would be arbitrary, but hopefully according to some thought-out logic by museum personnel. Perhaps in the future, you will simply enter your taxon, and the computer will list the taxa in which it is found in the collection, according to the classification in use.

On the Road to South Africa

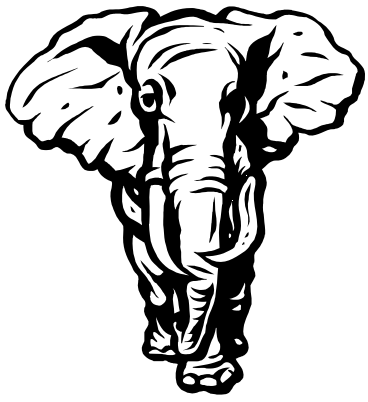
by Jeremiah George

Last February, with just 2 weeks notice, I found out that I would be accompanying UCR grad student Jung-Wook Kim to South Africa to collect Chalcidoidea wasps. With little time to prepare, I poured over our collections to get a handle on what taxa I might expect to encounter and what I might want to specifically target. The notion of going to South Africa was very exciting, especially visiting the Cape region and exploring the unique Mediterranean habitats. Having grown up in southern California, I have since childhood been interested in our unique Californian Mediterranean region. The chance to travel to an analogous region was too much to handle. I poured over the literature on the Cape floristic province and what other general natural history information I could find.

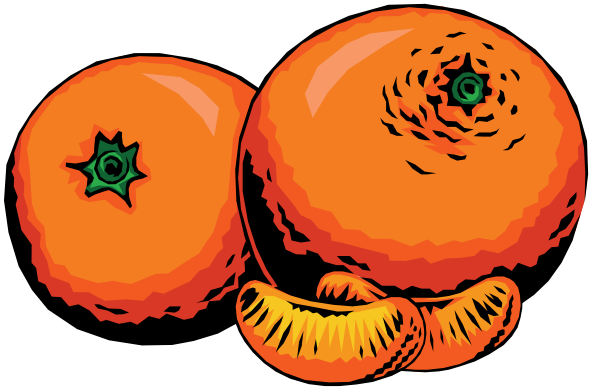


We departed from LAX on Feb. 1st to London and, after a painfully long layover, we went from London to Johannesburg. Our travel time was well over 36 hours after which I felt as if I had been run over by a truck and left to slowly die. My inability to sleep when flying is clearly non-advantageous for long distance travel and after multiple attempts to combine Tylenol PM and liquor I was unsuccessful at producing anything more than a general state of drugged malaise. However I did experience a very Wallacean hallucination concerning the break up of Gondwanaland. As I looked over at Jung Wook sleeping peacefully I contemplated strangling him for resting so comfortable.

Finally we arrived at Johannesburg in the morning some number of days later (I think it was the 3rd) at which time we stumbled to the rental car agency and I proceeded to drive (on the wrong side of the road) to Pretoria about 45 min north of Johannesburg. We checked into the Arcadia hotel in Pretoria within walking distance of the ARC-Plant Protection Research Institute which houses the South African national collection. After a good night sleep Jung Wook and I visited Gerhard Prinsloo at ARC to study the Chalcidoid collection and get advice on collection locales. Dr. Prinsloo proved to be a true gentleman and scholar, a pipe-smoking old guard systematist with a healthy pessimistic view of the world. The next day we drove from Pretoria to Nelspruit, southwest of Kruger National Park. Jung Wook had made a connection through Bob Luck (of UCR) with some people in Nelspruit working for Citrus Research International. That afternoon we met with John Henry Danell at the CRI facilities in Nelspruit. John Henry had done extensive work on *Aphytis* on citrus in the region and Jung Wook was interested in collecting a number of South African taxa for molecular work. John Henry proved to be an invaluable connection and we spent the next few days bouncing from orchard to orchard. I spent much of this time sweeping adjacent natural vegetation whenever possible and on at least one occasion went off on my own to collect areas that were of greater interest to me. An area that proved to be fantastic, was the Lowveld National Botanical Gardens (just east of Nelspruit), a large facility the majority of which is natural vegetation and is fenced which made it ideal for running pan traps without the problem of tampering. The pan traps at the gardens produced a number of interesting beasties including a series of the bizarre stalk-eyed flies (Diopsidae). Interestingly they appeared to be only attracted to the blue pan-traps. By the 7th things began to get wet which limited my collecting. The morning of the 7th Jung Wook accompanied John Henry to a citrus growing region to the north. I took the rental car and headed out on my own. We planned to meet at Pilgrim's rest that evening after I had serviced my traps at the gardens. It had been raining heavily the last day, adding to my frustration. I left Nelspruit early and took a convoluted rout to Pilgrim's rest with the hopes of escaping the rain. Depressingly, much of the Drakensberg range which is considered a floristic hotspot of endemicity has been converted to Eucalyptus woodland for pulp, especially the region between Nelspruit and Sabie south of Graskop. Large pockets of natural vegetation exist, however, access is difficult if you're not familiar with the region. Due to the poor weather conditions I was unable to do substantial collecting. I met with Jung Wook and John Henry in Grakop and we got a nice hotel for the evening. The next day Jung Wook and I decided we should try to beat the weather and head back to Pretoria. We contacted Prinsloo to inform him of our plans (he had made us promise we would check in; when we left Pretoria his parting words were “remember Africa is not for sissies”). Being so close to Kruger National Park we decided to make a big loop through the south end of Kruger to see the obligatory megafauna and headed back that evening to Pretoria. We staggered into the Arcadia Hotel in the early evening. The next morning Jung Wook and I trashed our hotel room sorting and consolidating our samples. We spent the afternoon working in the collections at ARC. That evening we dined with Prinsloo at a pub near the University of Pretoria where his son works as a bartender. After multiple rounds, we got the whole history of South African chalcidodologists including a number of funny stories about D. Annekke who was Prinsloo’s predecessor at ARC and who did a post doc with H. Compere at UCR (we have some significant holdings of chalcidoids from South Africa which were the product of this relationship). The next day we met Prinsloo and headed about 45 min east of Pretoria to his vacation home in a beautiful highveld game reserve he co-owns with a number of other people. The collecting here was fantastic for both Jung Wook and myself. Prinsloo’s intimate knowledge of the area allowed Jung Wook to make extensive collections of various hard scales, many of which were heavily parasitized. The reserve had a number of natural habitats including a large river with a beautiful riparian community. Others included



grassland and interesting scrub communities dominated by *Diospyrus* (Ebony) and *Protea*. The next day we flew to Cape Town, arriving on Sunday so we were unable to connect with our contact (Dr. Simon Van Noort) at the Cape Town Museum. We unpacked and relaxed planning our collecting localities for the next week. That afternoon we drove around the peninsula to Hout Bay a wonderfully charming beach community and did some cursory collecting. The fynbos community (analogous to our chaparral and coastal sage scrub) is a incredibly interesting hodgepodge of various unique genera and Gondwanan relicts. The next day we met with Simon and worked in the collections and reviewed our itinerary. The Cape Museum is a beautiful establishment, the oldest natural history museum on the continent and houses collections from over 150 years ago from the region. The next day we headed over to the Kirstenbosch National Gardens, probably one of the most beautiful botanical gardens I have ever visited. They have a fantastic collection of South African plants especially the local fynbos community. The gardens are situated on the east slope of Table Mountain and much of the gardens are predominantly natural vegetation. The collecting was satisfactory and Jung-Wook found a number of hard scale infestation that showed signs of parasitism. The next day we drove up to Citrusdale to collect in the citrus growing regions in the area north of Cape Town and in the natural vegetation of the Cedarburg range . By a stroke of luck as we pulled into the tourist information center for the region, we bumped into a local citrus grower who worked closely with the regional insectary and had a interest in beneficial parasitoids. We ended up staying at his house that evening; to our surprise, he was the owner of the Baths resort. We had been told by a number of people we should stay at the Baths and target the immediate vicinity. I ran a huge number of pan traps in the immediate vicinity while Jung-Wook arranged with Tony Hall to meet with Stephan Honiball (the head of the local insectary) to hit a number of local orchards. We spent the next day bouncing around citrus groves, and the following day headed up to Clanwilliam in the Cedarburg so we could do more collecting in predominately natural vegetation. The Cedarburg's is one of the most amazing mountain ranges I have every had the pleasure to visit. The range is dominated by mountain fynbos a bizarre open shrub community with tree size *Proteas* and the relictual Clanwilliam cedar (*Widdringtonia cederbergensis*). Other intriguing plants we encountered were the rich assemblage of aloes and Crussulacea. The area's indigenous people were close relatives of the San (see the movie The Gods Must be Crazy) and numerous rock art and encampments remain that indicate their historic presence. Early European exploration of the region noted " much grass, good firewood, large forests and impenetrable scrub (Picketberg, 1685). However the area has never been heavily populated and huge expanses of natural vegetation remain. The next few days we sampled the Cedarburg's and the area around Citrusdale and the Baths along the Olifants river. Chalcidoid collecting was fantastic, however, since we visited during their summer, the general insect activity was low except in the highest regions of the Cedarburg. Finally it was time to go. We packed up the morning of the 15th and headed back to Cape Town were we had dinner plans with Simon. That evening we had a little R&R before we departed back to Pretoria. Cape Town is a must for anyone traveling to South Africa; the old colonial town has a marvelous funky charm. Our flight back to Pretoria was uneventful except for the bags of samples Jung-Wook was carrying which proved to be something of a conversation piece.



We again stumbled back to the Arcadia in Pretoria, our new home away from home. The next day we collected around Pretoria and made plans to meet Prinsloo in the morning so I could pick up my malaise trap which was running on a nearby ARC research station. That night I frantically packed my samples for shipping. The next day I met up with Prinsloo and said my farewells. My flight was not till the evening however I wanted to get into Johannesburg so I could confirm that all was well with my shipping plans for my samples. I sadly left Jung-Wook who stayed on for another week of collecting and boarded my return flight promising myself that I would return.

Currently, much of the material we collected has been sorted, however, most of it remains to be mounted and examined in depth. It appears from the material examined so far, the trip was very successful. A number of new taxa of Trichogrammatidae were collected. Some of the Proctotrupoidea have been sent to Dr. L. Masner who has indicated that several represent interesting new taxa including two new species of the genus *Nixsonia* which is considered a "living fossil" and was previously known from 15 described species from Africa. We have also contributed significant material for Matt Buffington's research on the Cynipoidea. All the non-parasitica (Hymenoptera) have been deposited in the Entomology Research Museum and much of it awaits curation before any other interesting finds can be documented.

On the Road to Nebraska (Nebraska???!!!)

By Matthew L. Buffington

Acquiring funds from FERM to collect insects in KS, NV, UT and CO was easy. Convincing John Heraty to fund us to attend a Biogeography workshop in Lincoln, NE was even easier. Driving the nearly 2000 miles each way trip was a bit more formidable. Add to this a strict time schedule (we didn't want to miss the workshop did we?), an overbearing "drive straight thru" person such as myself and a "Daddy, I need to go potty" passenger such as James Munro and you know we were in for an adventure…

Climbing out of the San Joaquin Valley to Tahoe and beyond, we were refreshed and eager to hit the asphalt. Various Winnebago's and angry truck drivers attempted to diminish our enthusiasm, unsuccessfully. We reached an epiphany at Shoe Tree (see photo) 61 miles west of Austin, NV. Eastern NV yielded great mounds of cowpats and a few dead cows (No, Dave, we didn't turn the cows over to look for trogids). The shoe tree is a tree out in the middle of nowhere which has been decorated with the worn shoes of travelers, tied together at the laces and tossed over the branches of the tree. We traveled on discussing family history, tree searching algorithms and the 53 breeds of domesticated cows. Dinner in Delta, UT left us full of heartburn and plenty of gas. After searching for about 10 seconds, we found a suitable motel in Salina, UT. Good night James.

At this point in my travelogue I would like to explain our route. Enchanted by pre-interstate America I try my hardest to travel routes less traveled. Highway 50, 'the loneliest road in the land', is perhaps the closest thing to route 66 remaining west of the Mississippi river. In central UT, the road meets I-70 and takes you through some of the most austere scenery I have ever experienced since I saw James eat breakfast. Hwy 50 regains supremacy in central Colorado, going through the Rockies. Unfortunately for us, we were stuck behind one tourist after another; didn't they know we were on official FERM business? In Pueblo we contacted Dr. Greg Zolnerowich (Kansas State U. Dept. of Entomology) our man in Kansas, and he commanded us to re-route to I-70 to make up for lost time (which we did). Eastern Colorado is not what I would call exciting, though most filling stations will give you free coffee after 9 pm (whoa perks!).

At this point, my driving was absolutely challenged; ca. 50 mph crosswinds (shifting of course) matched with heavy drizzle, at the end of a 14-hour day combined for an un-fun driving experience (what's the German term for that?). We made it to a rather unknown town for sleep (rather unknown since I cannot remember its name, but it was in KS).

We rolled into Manhattan KS in the late afternoon. The 'Little Apple' is home to KS State U. and one Robert Kula (Bob). Bob has 2 interests in life braconid systematics and food. Bob definitely prefers quantity over quality, the former being the key ingredient in a decision making process regarding where to eat dinner. At any rate, Bob's house was our house, and we enjoyed an evening of refreshment and stories regarding our major profs (which of course know each other). Earlier that evening we visited the Konza Prairie Reserve , just outside of Manhattan. If you ever spend any time in this part of the country, a visit to this reserve is a must, just keep an eye out for the poison ivy and the buffalos (we found them both).

I will not bore the reader with the details of the biogeography meeting in Lincoln. Let's just say it was a chance of a lifetime for anyone interested in the topic; James scoured the entire campus for scale insects on oaks; and whilst the scarab collection at UNL rivals that of Dave Hawks, the Hymenoptera collection belongs in the category of 'afterthought'. Finally, I learned the hard way that 'Team Scarab' has a rather strange sense of humor.

Upon our return to Manhattan, we consumed another large meal (like that's a surprise), filled ourselves with more refreshments and hearty laughter, and began to turn our attention Westward and home (not before popping *Pulp Fiction* into the VCR at 1:30am). Torrential rains heralded our departure later that morning, giving our less than capable Nissan Frontier a much needed wash. We were on our way home.

Just as on previous long drives I have endured, the return home on this trip was going to be as fast as possible. The romance of the two-lane highway was now like an old girlfriend of whom you live in fear of breaking the windows on your car. We did still manage to take in some bizarre sites, such as the limestone 'fence posts' of western Kansas. We also just missed the closing of the famous museum in Prairie Dog City, Kansas; if we had only come through 5 years ago, we might have caught a glimpse of the 5000 pound prairie dog, the 5 legged cow and the miniature Clydesdale horse. Just goes to show how strange this world really is (and that timing *is* everything).

We stuck to I-70 as far as possible. Eventually the road turns northwest, and in Grand Junction, CO, we rejoined the blessed Hwy 50 (now just an old flame). We spent a memorable night at the Wagon Wheel in Grand Junction; at the time of this writing, I cannot directly recall what made it memorable, but I felt the reader should know about it anyway (why, I am not sure).

Towns like Delta, Ely, Austin and Eureka were now like old friends, but we blew through them just the same. We did approach the sacred Shoe Tree once again, but at speed. As we approached Fallon, NV (were we met up with I-80) we could see a major weather system over the Sierras. The sunset effect was lovely, but James and I became concerned about Donner Pass. In Sparks our troubles were confirmed. I called my father for advice and weather conditions while James urinated for the 157th time that day. We climbed out of the Reno area, and had excellent weather through Truckee and right up over the summit. But in Soda Springs, snow began to fall, and fall, and fall.

Our enthusiasm about the weather phenomenon completely foreign to all parts of S. California waned rapidly as my driving visibility was reduced to the 20-30 feet immediately in front of my plastic bumper. Our only consolation came from the fact that this was a weeknight, and traffic was very light. Still, after 15 hours on the road that day alone, this was not an amusing way to finish our journey. By the time we reached Colfax, we finally encountered rain, and eventually we passed the entire system. In retrospect, the whole weather system was lodged against the western slope of the Sierra Nevada mountains, pouring down all that lovely water into reservoirs and canals, destined for thirsty Southern California.

We made it safely to Sacramento, where we stayed the night with my folks. James completed the last leg (485mi) to Riverside the next morning. Aside from his brakes 'self-applying' near Grapevine at speed, his trip was without trouble. As for myself, I made it to Diamond Bar without trouble; then I had a blowout climbing the hill on the 60 freeway (the tires were one week out of warranty). At any rate, we made it, safe and sound.

At this point, you may be asking yourself 'where is the entomology in this bizarre travelogue?' Well, I'll tell you (now that you have been good and read this far). We made sweep samples at road stops in Nevada, Utah, Colorado, Kansas and Nebraska. This is another reason I prefer to stay on smaller roads to the interstates. One sample taken at Shoe Tree, NV, yielded 6 individuals of *Ganaspidium hunteri* (Crawford) (Hymenoptera: Figitidae), specimens critical for research; and that was sweeping in ca. 50 mph winds! We also set up two very productive malaise traps at the Konza Prairie. All samples were collected into 95% EtOH, sorted by James and myself, and deposited in the UCR Entomology Research Museum. James and I personally feel the FERM Collecting Grant for this trip was an excellent use of funds and hope to participate in future granting opportunities.

More Entomological Quotes

..I confess I often feel wearied with the work, and cannot help sometimes asking myself what is the good of spending a week or a fortnight in ascertaining that certain just perceptible differences blend together and constitute varieties and not species...What miserable work, again, it is searching for priority of names. -
Charles Darwin (fide Irving Stone)

"We like to think we are living in an age of man, but we are obviously living in an age of beetles."
J.B.S. Haldane

In memory of Thomas K. Wood

By Gordon Pratt

On Saturday, September 7, after getting back from a field trip at China Lake, I found out that Tom Wood, my former mentor and colleague at the University of Delaware, died earlier that day of pneumonia. He had been fighting cancer for at least a year and a half. Tom, like many geniuses, had limitless passion and appetite for knowledge. On the other hand, he was like many eccentric entomologists, since his passion was totally encompassed by a single group - the treehoppers (Membracidae). During the time I worked with Tom, he would come into the lab seven days a week and often work more than eight hours a day. He continued doing this up to the last three weeks, when he first came down with pneumonia.

Tom's interest in treehoppers was extremely broad and encompassed maternal care, social behaviors, mutualisms, insect-plant interactions, evolution, substrate-born communication, and many other aspects of these insects. His favorite pastime was to sit down and plan experiments on treehoppers over a cup of coffee and a cigarette. While I was his postdoc, we planned hundreds of experiments while consuming mass quantities of coffee and cigarettes. Tom felt that the more experiments we began, the more likely that at least several of them would get off the ground and produce useful results. Biological organisms, as we all know, have quirks and present unpredictable problems and difficulties as scientific subjects.

Perhaps Tom's most notable achievement was his sympatric speciation model of the different host races of *Enchenopa binotata*. The eggs of this treehopper are placed within the xylem tissue of the food plant. Breaking of diapause and eclosion of the first instar nymphs of *Echenopa* occur shortly after initiation of xylem flow in the spring. Since different plants break winter dormancy at different times during the spring, populations of *Echenopa* on different hosts become temporally disjunct in their development, leading to reproductive isolation from one another. For this reason, whenever a successful host shift occurred onto a novel plant genus, it is hypothesized that a new host race would form. Most recently, Tom was working on a world phylogeny of the Membracidae, which his collaborators in this research hope to publish posthumously. Several years ago, Tom established a tax-deductible fund to support future membracid research. This fund is administered by the University of Delaware, 113 Townsend Hall, Newark, DE and is called "Thomas K. Wood Treehopper Research Fund".

FERM Annual Meeting

The date of the FERM Annual Meeting has not yet been determined but will be sometime in late January or early February. At that point, we will have an opening ceremony for the Museum so everyone can see the installation of the new compactor system. This will also be an excellent excuse for Doug to tidy his office. Also, this year's speaker will be our own Rick Vetter who will be giving a talk entitled, "The natural and unnatural history of spiders" . Bring your camera.