

Friends of the Entomology Research Museum



Newsletter

Editor: Rick Vetter



FERM member Hawks and his Jewel Scarab beetles shine brilliantly in National Geographic

by Rick Vetter



Those of us who know Dave Hawks, seminal and founding member of FERM, have been listening to his cavalcade of tales about the virtues of big, shiny, gaudy, resplendent, spectacular jewel scarab beetles for the last decade. Dave has a new audience, and it just got bigger. Although most of us work with less dynamic (read: less media-worthy) arthropods, the flashy coleopterans have been garnering a decent bit of publicity lately because they are pretty, large, and something the general public can appreciate without lapsing into a coma. Well, as if this weren't enough, Dave and colleague Ron Cave will be having an article published in the February 2001 issue of National Geographic magazine. (Yes, THAT National Geographic magazine, the one that no one ever throws out and the massive collections of which in garages and attics of heavily populated areas of the U.S. are responsible for undue pressure on the earth's crust, influencing plate tectonics; see Kaub, G. H. 1974. National Geographic, the Doomsday Machine. *Journal of Irreproducible Results*, p.22.) Not only is Dave having an article published, but they are putting one of his scarab

(continued on p. 2)

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 article in 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)

FERM Annual Meeting Saturday, January 6th, 7:00 PM UCR Botanic Gardens Conference Room Dr. John Alcock Regents' Professor of Biology Arizona State University

We are proud to announce our guest speaker for the Annual Meeting of the Friends of the Entomology Research Museum (FERM). Dr. John Alcock will present his talk, "The Thrill of Insect Behavior" on Saturday, the 6th of January, 2001.

Our gathering usually begins with a short business meeting which may include a book auction conducted by crowd-pleasing master auctioneer Rick Vetter. As usual, the meeting will proceed with the guest speaker and conclude with a scrumptious buffet dinner for FERM members and guests.

In his talk, "The Thrill of Insect Behavior," Dr. Alcock will address the role of insect behavioral studies in the development of a modern approach to animal behavior. During more than 30 years of research, Dr Alcock has explored aspects of insect natural history, especially in Arizona and Australia. His interest has been in the evolution of insect mating behavior with a great deal of field work focused on insects of the Sonoran Desert. Dr. Alcock is author of numerous popular and technical works. Many of these publications document the variety of male mate-locating techniques. In recent years he has worked with various bees, nymphalid butterflies and dragonflies.

The UCR Botanic Gardens are on the east side of campus near Lot 13, across from the Science Library. Follow Perimeter Road until you see signs for the Gardens & park in Botanic Gardens lot.



photos on the front cover. This is a career milestone, worthy of tremendous trumpeting, including an article in the FERM newsletter and, therefore, here it is. During a lunch interview at a Mexican restaurant, I shoved an imaginary microphone in his face and posed various inane journalistic questions, to learn more about him.

Maybe I'll never win a Pulitzer with the actual material I got to work with, but here goes... In reality, or as close as it gets to it, Dave spent his younger years like many of the rest of us, in a quiet neighborhood, happily collecting things, shifting from stamps to coins to fossils to insects. His interests in nature were always spurred on by his mom, Elois Hawks, a former first-grade teacher, Master Gardener, FERM member, and an incredibly successful San Diego Natural History Museum docent (her elementary school outreach program is called "Backyard Bugs"). Even as a 4-year old, Dave made up names for insects when he didn't know them (a behavior in which all taxonomists indulge at one level or another when you stop to think about it).

On one fateful day, 13-year old Dave was collecting skippers in his front yard (albeit, to feed to horny-toads) when a high school-aged entomologist (Larry Shaw), who lived a few blocks away, saw him swinging a net. The ensuing conversation was the kernel that started what would become a lifelong interest in entomology. Larry introduced Dave to the pre-imaginal (now UCR Entomologist and FERM member) Steve McElfresh, and the three of them went on insect collecting trips, some of which were bartered in exchange for child-labor law violating yardwork and landscaping at the Hawks residence.

Although Dave initially concentrated on the Lepidoptera, a fateful trip to southeastern Arizona in 1974 exposed him to the wonders of jewel scarabs of the genus *Plusiotis* where he collected three of the four U.S. species. For the one or two FERM members who are not familiar with these beetles, they are 1-2" long and brightly colored, photogenic, charismatic, etc. (see the Bug of the Month insert in this issue). At the tender age of 17, Dave's fascination with insects led him to hanging out at UCR in the Entomology Department where he met Saul Frommer, Greg Ballmer and John Pinto; Dave volunteered his nascent skills in pinning insects and provided other free museum labor, which he continues to this day.

Continuing with entomology, Dave enrolled at UCR in 1978 as an undergrad and then went on to receive his Master's at UCR working on taxonomic aspects of the cryptically-attractive noctuid moth genus *Catocala*, which is still a project in progress. However, the shiny jewel scarabs still beckoned like Homer's Sirens. Collecting trips to Central America with Guy Bruyera in the late 1980's opened up Dave's eyes to the expansive tropical diversity of jewel scarabs of the genera *Chrycina* and *Plusiotis*. Although these showy beetles have sometimes been considered rare and in need of protection by some conservationists, Dave discovered that if you were

in the right place at the right time, the beetles were abundant and reliably collectible over the years. These trips led to the description of a few new species of *Plusiotis* and the realization that this was a beetle group ripe for the plucking. Associations were then made with Ron Cave, Professor of the Pan-American School of Agriculture in Honduras with whom Dave has collaborated extensively. In 1997, they submitted a proposal to the National Geographic Society to look at various life history characteristics of these charismatic beetles. One of the upshots of their research was that if they could show how plentiful jewel scarabs are (using mark-recapture studies), the beetles might be one tool in helping to preserve valuable tropical environments. Because of the beetles' beauty, they are highly prized by collectors who pay big bucks for them and if the native peoples could harvest them without detriment to beetle population numbers, it might provide the impetus to reduce tropical rainforest destruction and allow the native cultures to survive without the slash-and-burn approach.

In addition to the field work, Dave has recently been pushing forward the taxonomic front for jewel scarabs as well. Working in collaboration with his Entomology Department supervisor, Dr. John Heraty, and post-doc Dr. Christina Babcock, and using DNA analysis in concert with cladistic mumbo-jumbo voodoo, Dave's work will eventually result in the familiar genus *Plusiotis* and less-familiar *Pelladnotopsis* being synonymized under the older name *Chrycina* in a soon-to-be published article.

To prove Dave's tunnel-visioned fascination with entomology (as if you needed proof), all his athletic endeavors in life involve racquets (tennis, racquetball, badminton, ping pong) which allow him to maintain his entomological stamina, form, and prowess with an insect net. And if we didn't already know enough about his single-minded quirkiness, Dave's first car was a Volkswagen Beetle (green, of course), one of his favorite musical groups is The Beatles, and his two Canine-American companions (Clover and Shiloh) are beagles. When asked for a summarizing quote, Dave responded with, "I don't think that I am particularly special as a scientist or entomologist," (a notion with which Dave's friends and colleagues will probably all-too-heartily agree, although it is mostly because collectively we are petty, snide and *Chrycina woodi* green with envy) "I just work on charismatic, colorful and popular insects."

So, with proud Momma Hawks, all teary-eyed and lumpy-throated, standing behind him waving a gold lamé *Chrycina resplendens* banner, we here at FERM collectively and with whole heart, remove our sweat-stained pith helmets, raise our nets in tribute, and salute Dave "If I can't use a #4 stainless steel Elephant brand insect pin, it isn't worth collecting." Hawks on his monumental achievement.

NEWS FROM THE MUSEUM

by Serguei Triapitsyn & Doug Yanega



The fall quarter has been busy in the museum. James Barry made considerable progress with the transfer of the Anderson Immature Collection into vials suitable for long-term storage, but we discovered that the stoppers are no longer manufactured (DANG! - to say the least), and have yet to find suitable substitutes now that we've run out. George Peck has been helping with databasing and loan preparation, including an outgoing shipment containing about 80% of the Museum's mayfly collection. We continue to receive malaise trap samples from the Russian far east and other localities, and continue to find new species among the material.

Of special note is a major donation of beetles (mostly *Acmaeodera*, a genus of Buprestid beetles) from FERM member Burdette White, in addition to his reprint collection, prompted by his moving to northern California with his new wife. Databasing and incorporation of this donation should begin next year, and we thank Burdette and wish him well. The Museum database now has records for over 21,500 specimens, including recent major loans of clerid and buprestid beetles that have come back with IDs. Incidentally, the new braconid wasp from Thailand that Dr. Donald Quicke is describing (mentioned in the last newsletter) will be named *Iphiaulax yanegai* - quite an honor!

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.



Book and Reprint Recycling Committee



In the summer newsletter, several books were offered for auction by mail in order that all FERM members had a chance to bid on them. Well, only 1 person bid on 1 book so we are going to trash that method of selling old books. Therefore, at the annual meeting on

January 6th, the following books will be offered for in-house bidding. (and you could have had a 1910 edition of Wheeler's *Ants* for only \$5. Too bad!!!)

Borror, DeLong & Triplehorn 1981. *An Introduction to the Study of Insects*, 5th edition, Saunders College Pub. 827pp.

Brues, Melander & Carpenter 1954. *Classification of Insects*. Bull. Mus. Comp. Zool. 917pp. (a 1954 update of the 1932 original)

Snodgrass 1935. *Principles of Insect Morphology*. McGraw-Hill. 667pp.

Steinhaus 1946. *Insect Microbiology*. Comstock Publ. 763pp. (signed by the author with a note to Ted Fisher, "Best wishes Ted" and the author's signature)

Ebeling 1959. *Subtropical Fruit Pests*. UC Div. Agric. Pub. 436pp.

Quayle (UCR's own H.J. !!) 1941. *Insects of Citrus and other Subtropical Fruits*. Comstock Publ. 583pp.

Wheeler 1910. *Ants*. Columbia Univ. Press 663pp. (this original publication of the classic book did service at Warner Intermediate School (GASP!!) and was discarded (GASP!! again). Its binder is completely separated from the text but should readily be reparable.)

SPECIAL NOTE: Also to be auctioned off will be a large colored ink print of a Quino checkerspot butterfly, graciously donated by Kay Stockwell. It is number 14 of 980. Just as rare as the butterfly itself.



PINE: PARTNERS IN NATURE EDUCATION

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

A Field Study of Birds: Winter \$185 (03P23)

[Tue. 7:30-9:30 pm, Jan. 9, 2001/ Field trips all day Sat. Jan. 13, 20, Feb. 3, 17, 24]

Field Study of the San Andreas Fault: San Bernardino to Mecca Hills \$90 (03N24) [Sat. 8 am-5 pm, Feb. 3, 2001]

Winter Ecology in Yellowstone \$345 (03P01) [Mon. 5-8 pm, Feb. 5, 2001/ Tue.-Thur. 8 am-4 pm, Feb. 6-8]

Desert Flora \$160 (03P08) [Fri. 5-8 pm, Feb. 23/Sat. 9 am-5 pm, Feb. 24/Sun. 8 am-4 pm, Feb 25]

Geology and Natural History of Death Valley \$140 (03N25) [Sat. 9 am-6 pm, Mar. 10, 2001/ Sun. 8 am-3 pm, Mar. 11]

Shrubs and Trees of Joshua Tree National Park \$145 (03N44)

[Fri. 6-8 pm, Mar. 16, 2001/ Sat. 8 am-5 pm, Mar. 17/Sun. 8 am-12 pm, Mar. 18]

Natural History of the Mojave National Preserve \$250 (03N31)

[Fri. 8-10 pm, Mar. 23, 2001/ Sat. 7:30 am-5:30 pm/7-8 pm, Mar. 24/Sun. 7 am-3 pm, Mar. 25]

Flora of Joshua Tree National Park: Wildflowers \$145 (04N28)

[Fri. 6-9 pm, Apr. 6, 2001/ One weekend field trip to be arranged]

A Field Study of Birds: Spring \$185 (04P23)

[Tue. 7:30-9:30 pm, Apr. 17, 2001/ Field trips all day Sat. Apr. 21, 28, May 5, 19, June 2]

*******Ecology of the Southern California Butterflies***** \$195 (04N29)**

[Wed. 6-9 pm, Apr. 18 - May 9, 2001 plus three Saturday field trips TBD 9 am-3 pm]

The Greater Roadrunner: A Natural History \$160 (04N34)

[Fri. 5-8 pm, Apr. 20, 2001/ Sat. 8 am-5 pm, Apr. 21/Sun. 8 am-3 pm, Apr. 22]

Introduction to Plant Identification and Ecology \$145 (04N31)

[Fri. 6 am-8 pm, Apr. 20, 2001/Sat., Sun. 8 am-4 pm, Apr. 21, 22]

Wildflowers of the Desert Foothills \$145 (04N30) [Fri. 6-8 pm, Apr. 27, 2001/ Sat., Sun. 8 am-4 pm, Apr. 28, 29]

Geology and Natural History of the Eastern Sierra \$140 (04N22) [Sat.-Sun. 8 am-5 pm, Apr. 28-29, 2001]

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:

(Please submit titles of your recently published taxonomy and natural history articles to FERM editor!)

Osborne, K. H. and W. W. Allen. 1999. Allen-vac: An internal collection bag retainer allows snag-free arthropod sampling in woody scrub. *Environmental Entomology* 28(4), 594-596.

Osborne, K. H. and R. A. Redak. 2000. Microhabitat conditions associated with the distribution of post-diapause larvae of *Euphydryas editha quino* (Behr) (Lepidoptera: Nymphalidae). *Annals of the Entomological Society of America*. 93(1), 110-114.

Osborne, K. H. 1999. Additional notes on *Proserpinus clarkiae* and *Arctonotus lucidus* (Sphingidae) life histories from the Pacific Coast of North America. *Journal of the Lepidopterists Society* 53(4) 170-172.



Editor's Note: Every time a new species is described, the original taxonomic describer (author) needs to pick out one specimen that exemplifies the species (or genus or family, etc.). This specimen is designated as the holotype. Other types with different titles may be designated depending on whether additional specimens were available at the time of the initial species description, or if the original specimen is lost and a new specimen takes its place, etc. There are many different terms, so confusion abounds and can readily stymie the novice taxonomist.

ON THE TYPES OF TYPES

John D. Pinto

The eternal question:

Does it MATA PHORE u?

Typical response:

O, NO MATA PHORE me.

What, you may ask, do these corny existential utterances have to do with types? Well, it is the way my wife tells me I talk after spending too much time in my old Chicago neighborhood, and the old neighborhood does have its share of interesting types. But actually I was hoping they might help plant an obscure term in mind that has considerable significance for the type method and taxonomy. Some have thought that the term 'type' was simply too pedestrian for the erudite George Gaylord Simpson, when in 1940 he proposed the substitute term 'onomatophore'. Usage of onomatophore has never caught on for obvious reasons, yet it wasn't necessarily pompous erudition that prompted Simpson to suggest the term. He did so as an attempt to solve one of the common misconceptions biologists have about types and their significance. We will return to onomatophore and the misconception it aimed to solve later, but first let me briefly summarize a few things.

Almost all of us with interests in natural history are acquainted with 'types' at some level. Most of us know that described species of animals have **types**, and that these specimens are accorded exalted status in taxonomy and are highly coveted by natural history museums. We also have a sense that these specimens are somehow representative of their species. What is not as commonly known is that the type method is crucial for taxonomic stability at all levels and that just as species (and subspecies) have type specimens, genera have their type species, and families have type genera. In this article we will concentrate on type specimens and only briefly touch on types at the higher levels, although as we will

see, their function basically is the same.

So what are types and why are they so important? Let's start with basic definitions. When new species of plants or animals are described, authors generally have before them a series of specimens that constitutes the known members of the taxon. This accumulation is the type series. Authors are expected (and as of January 2000 now required) to select a single specimen from this series as 'the type' or **holotype**. Of course, if there is only one specimen there is no choice to be made. In any case, the holotype is the only specimen of the series that has any nomenclatural status, and for this reason it is referred to as a primary type. The requirement that there be one and only one primary type for a species is central to the maintenance of nomenclatural stability. I will explain why in a moment. If authors wish, however, they also may select additional 'types' from the series. To represent the sex opposite the holotype, they may designate an **allotype**. They also may designate all or a portion of the remainder of the type series as **paratypes**. Holotypes, allotypes and paratypes can only be designated by the original author. Authors are expected to designate primary types (= holotypes) upon species description. Allotypes and paratypes are more of an option although most authors include them.

Authors of new species have not always designated types. In fact, until the publication of the most recent International Code of Zoological Nomenclature, the designation of type specimens has not been mandatory. Because of prevailing views of the structure of biological diversity in the 18th and 19th centuries, it was not common practice to designate types when describing new species. Fortunately, it usually is possible to find the series of specimens that authors had before them at the time of description. If the type series consisted of only one specimen, then it automatically becomes the holotype as if it was originally designated by the author. However, generally the series consists of more than one individual. In this case, these specimens are referred to as **syntypes**. Because we are dealing with a series we still require a single primary type if we are to ensure nomenclatural stability. The first taxonomist restudying this described species will usually select one of the syntypes as the primary type. Because this individual is not the original author it can't be a holotype. Instead, it is referred to as the **lectotype**. It is not sufficient to simply put a lectotype label on a museum specimen, however. The designation of lectotype must be formalized through publication. Once this specimen is designated, the other members of the syntypal series are no longer syntypes. If we need a name for them, we can call them **paralectotypes**.

We have now recognized two kinds of primary types - holotypes, generally designated in the original description, and lectotypes, designated sometime after the description of the species. Both stem from the original series. There is only one other kind of primary type and this is the **neotype**. Neotypes are designated if the holotype, syntypes, or lectotype, as the case may be, has been lost. As with lectotypes, neotype designation must be formalized through publication. Unlike the other two primary types, neotypes do not necessarily represent the original series. A question that frequently comes up is: Can a neotype be designated if there is a type but in such awful condition that no one can tell what species it belongs to? The answer is no. To decommission an existing type requires a formal petition to the International Commission of Zoological Nomenclature. Until this is done, the name associated with the useless type is a *nomine dubium*, a name of unknown or doubtful application.

There has been considerable mention of 'nomenclatural status' so far. What is meant by this, and why can only one specimen, the primary type, have it for any given species? The reason is that taxonomists often (too often, according to the applied entomologist) make mistakes. What is described as a single species (sp. A) may actually represent two or more species (spp. A, B, etc.). Perhaps we are being overly severe to call these mistakes since new species are usually described when very little is known about them. As we learn more about distributions and new characters - generally well after the original description - we may find that differences previously unappreciated are actually taxonomically significant. It is frequently the case that the type series itself contains more than the one species. If so, then there is the question of what animal does 'sp. A' refer to and what animal(s) needs a different name? A little reflection should convince us that there is a problem only if we lack a primary type. If we have one then it is clear that 'sp. A' is the name of the primary type and of all specimens believed to belong to the same species as the primary type. In other words, the single primary type (holotype, lectotype or neotype) bears the name of the species. But there can only be one name bearer at any given time. If we have two or more (e.g. syntypes), then there is potential ambiguity. It follows that type species have the same function as type specimens (i.e. name bearing) at the genus level when we decide to split a single genus into two or more genera or subgenera - i.e., the old genus name stays with the type species. And, of course, type genera serve a parallel function at the family level. We consider the type method as providing nomenclatural stability at the species level because the names that are proposed can always be unambiguously attached to

at least one actual specimen.

This critical stabilizing function of types is what Simpson was trying to convey by the substitute term "onomatophore", which is Greek for "name bearer". He recognized that the word 'type' unfortunately suggests 'typical' and, as we now know, this is not an accurate definition of the term. A type may or may not be typical of the organism it represents. Yet many biologists believe that it is. Of course, most taxonomists do attempt to select 'typical' specimens as types but their concept is constrained by the type series which in time may prove to be decidedly atypical of the species. This is not to say that types have no function in typification. They obviously are the best examples of the species associated with the original description, and become especially important as examples when this description is inadequate for identification. In such cases, only the type may be able to tell us what species the author actually described.

Considering that only primary types have real function in taxonomy, what is it with all the other kinds of types that we hear about? We have already mentioned allotypes, paratypes, and paralectotypes. The value of these non-name bearing types is that they immediately identify the specimen so labelled as a member of the original series. And, of course, syntypes are of considerable significance because they represent the entire type series and include the eventual primary type (i.e. lectotype). But there are other specimens that do not belong to the type series but, because they often have some connection to the series, have been given special type status. For example, a **topotype** is a specimen collected at the same place as the type; a **metatype** is a specimen compared to the type by the author of the species; a **homotype** is a specimen compared to the type but not by the author of the species; a **co-type** is an ambiguous term that has been used both for syntype and paratype, etc., etc. A bewildering plethora of types of types have been proposed that, quite honestly, are best ignored. For the most part, these terms have become obsolete. However, those interested in being counted among the cognoscenti in this arcane field should refer to articles by D. L. Frizzell (1933), 'Terminology of types' published in the *American Midland Naturalist*, and by H. T. Fernald (1930), 'On type nomenclature' in the *Annals of the Entomological Society of America*. These articles list and define well over 100 types of types! Of course, all of us can profit by acquainting ourselves with chapters 13-16 in the 4th edition of the *International Code of Zoological Nomenclature*, which is the most recent treatment of types in animal taxonomy; a copy is in the ERM and available for those interested in the details of the system.

THE 2000 INSECT COLLECTATHON

Note by Dave Hawks: The following account is by Zac Porcu, my Collectathon partner this year. Zac and I (and Zac's dad, Daniel) had a great time chasing bugs during those 24 hours in September, and, although we didn't win, we gave it our best shot (and besides, we figure that the other two teams must have cheated!). Anyway, you can be sure that we'll enter the contest again next year, and we hope others will join us!

My name is Zac Porcu. I'm 12 years old and a member of FERM. This is my journal entry of our yearly insect Collectathon where teams of entomologists go out in a given area and try to collect as many insect families as possible. The team who wins the most insect families after 24 hours wins. The entomologists involved were Dave Hawks, Greg Ballmer, Doug Yanega, Ken Osborne and Gordon Pratt. We all went to the Santa Margarita Ecological Reserve (SMER). Gordon, the organizer of the Collectathon, unlocked the gates and gave us a small tour of the place which included the nice two-story house which we were to call home for the 24 hour period of the Collectathon.

The Collectathon started at 11 AM on Saturday, September 23, 2000. The teams were Doug & Ken, Gordon & Greg, and me, my dad and Dave. Me and Dad took our car and Dave took his. We stopped at potential collecting sites on the way back to the house and got about 70 different families just then. When we got to the house, we loaded our collecting equipment into Dave's car and went off together. We stopped to collect at a river, the tops of some of the mountains in the area, and some damp underbrush. We got back to the house and ate dinner. Then we set up the blacklights and watched them until 9 PM. About that time everybody got back and we all got around to bed.

We got up around 8:30 AM. We all ate breakfast and went out collecting again. Me, Dad and Dave spent the last few hours of the Collectathon at the lake. A nice place actually, with a sandy bank and tall grass where lots of Lepidoptera (butterflies and moths) and other things fly around. The river has lots of flat rocks in the middle of it where we could stand and catch things. Unfortunately, we didn't get any dragonflies but we did get 2 more families. As we drove home we saw a swarm of reproductive ants, with dragonflies swooping on them!

We stopped the car and went out after them. We caught 2 new families of dragonflies at the last second (courtesy of Dave for catching them). We got back to the house and then Gordon and Greg got back. But 30 minutes AFTER the Collectathon ended, Doug and Ken got back. We packed up our gear and drove back to Riverside. Dave said that we got at least 100 families. I don't know how much anybody else got but I hope we win!

Postscript from Doug Yanega: Final tallies by team (barring any hand recounts): Osborne & Yanega — 162 families, Ballmer & Pratt — 135 families, Hawks & Porcu — 121 families. Detailed results will be reported in a future newsletter.

Friends of the Entomology Research Museum Membership Form

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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.)

The Hercules Beetle Fighting Festivals by Mir S. Mulla and Siriwat Wongsiri

In late September 2000, we traveled to Nan Province (northern Thailand) close to the borders of Laos and China. We went looking for nesting sites of the giant Asian honey bee, *Apis dorsata*, and mosquitoes in the verdant valleys of Nan Province and surrounding areas. We happened to lodge overnight in Papua Bhuka Hotel (near Pua) a neat and comfortable set-up in the hills covered with dense teak forests. The owner of the hotel (an attorney by profession) was very happy to come across two entomologists. His name was Mr. Pairat Dithabumroong and he was serving as president of the HERCULES BEETLE CLUB OF THAILAND. Every year, the club promotes, organizes, and holds the Hercules Beetle Fighting Festival, with the sponsorship of Nan Province. The 5th such festival was held on September 23-24, 2000 in Nan, which attracted thousands of tourists (both Thais and foreign) including news media reporters, entomologists and beetle fanciers. The Governor of Nan opened the festival in a square in front of the Amphur Pua Administration Bureau. This unique entomological event raised our interest and we requested Mr. Dithabumroong to give us some background information on the history and scope of this festival. He graciously complied and the story is presented here.



The scarab beetle *Xylotrupes gideon* (L.) is known as "kwang" in local vernacular. There are other species of scarabs which are also trained and used in fighting. Beetles with 1, 2, 3 and 5 horns are subjected to culture and training. Beetle fighting tradition started with the Lanna people in the north, hundreds of years ago when they observed male beetles fighting each other for supremacy during the mating and breeding season (September-November). The villagers noted this phenomenon with deep interest and developed beetle fighting as a tradition to entertain themselves as well as to create a harmony among the neighbors. This tradition is now prevalent in 7 provinces in north and northeastern Thailand. Not only wild-captured beetles are used in the competition, but also artificial breeding programs and beetle farms are developed for raising

super-fighters. The kwangs, once a rare and disappearing breed of beetle, have become abundant because of beetle farms developed by the locals to raise strong beetles for the local as well as the national annual festival in Nan which is known throughout the world. It brings a great deal of fun and joy to the kwang admirers, insect collectors and tourists. The beetles carry a variety of names such as "Black Tiger", "Flashy Red" or sometimes the names of prominent politicians such as a prime minister, president of a university or governor. Asked if the beetles suffer in the fighting engagement, the locals believe that there is no suffering (Thais avoid torturing animals) because the beetles are insects and not animals and further that the beetles do not fight to death, but quit when they are tired or exhausted and the weak one backs off.



Siriwat (left), Mir (plaid shirt) and friends with Hercules Beetles

The HERCULES BEETLE CLUB has established strict rules and regulations for the fights. Those spectators who do not have their own beetles can obtain beetles from the club, which usually keeps 200 fighters available for matches by tourists. Experienced referees oversee the fights and call matched pairs to specially constructed arenas. The female beetle, placed in a chamber as a decoy, releases mating pheromones which stimulate the males, and thus, they initiate fighting over the female. If the fighting goes on for too long with no beetle retreating, the fight is called "yok" or draw. The winners are paired with other beetles, until one wins the title of the "Great Fighter of the Mountain". Loser males are given a consolation prize of being allowed to mate with female beetles, then are set free. The winners, however, must wait until they are defeated or until the end of the breeding season when they are treated well and allowed to father well-bred beetles for the future. To produce sure winners, the owners have to breed strong strains, train the fighter and provide them with optimum conditions for growth and development. The Thais say that people in the other countries train animals to obey their orders but in Thailand, people can train insects to do what their owners want. There is a lot of entomological knowledge to be gained from these time enduring traditions.