

SCARABS

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New and Innovative Uses for Vacuum Cleaners [Vibrations for Sex Appeal]

by Paul Skelley

I have told this story to several who look at me say “You're full of it.” Well that may be the case, but this story is true and the biological implications are postulated at the end.

I have been helping Mike Thomas & Robert Turnbow with their survey for *Gronocarus* in Florida. Since the larva of *Gronocarus* had never been described, they persuaded me to attempt rearing them just like I did for *Stephanucha* (Skelley 1991, *Coleopterists Bulletin* 45:176-188). We already knew of a few hot localities for *Gronocarus multispinosus* Howden, whose males fly in the rain to locate females and mate. So, I waited for a front (rain event) to go through the areas and my wife, Lucy, and I took off on a collecting trip. As it usually turns out, my spouse out did me by collecting most of the rarely seen flightless females.

I set up pint deli containers with sand, 1 female and 3 males each (approximately 6 total), hoping the beetles would mate and lay eggs. The containers were kept by my desk for close observation. Weeks went by and no activity was seen. Major rain storms went through the area, but no activity. I dug around in a couple, and the

beetles were still alive. So, I waited longer and basically gave up on the project.

For some reason, I decided to clean my work area. Maybe the work had piled up too much, maybe I wanted to see what color the floor was, maybe it was the continued threats from the state fire marshal; anyway, I brought a vacuum cleaner from home and proceeded to clean the carpet. After about 5 minutes I heard an irregular buzzing. I looked at the machine, figuring it was objecting to the dirt, but the buzzing continued. After finishing I turned the machine off, but the buzzing still did not stop. I followed the sound to the pint containers where I saw a couple of males flying like bats out of hell. Well, as much as they could fly in a pint container! Almost as soon as I saw them, they stopped flying, stood head up with antennae waiving for a couple of seconds, then they burrowed back into the sand.

Intrigued by this, I turned the vacuum back on. In a couple of minutes they were flying again. I repeated to turn the machine on and off, and each time the beetles responded in the same way: activity and flight with the machine running; cessation of activity and burrowing into the sand when the machine was turned off. I called in others on several different occasions and, much to my delight, the beetles responded exactly the same way. THERE ARE WITNESSES.

What could this mean biologically? We have always wondered what stimulates some of these rare rain-flying scarabs to begin activity. For *Gronocarus* it appears moisture is not the stimulus, but the sound or vibrations of rain pounding the earth is the trigger! As a kid I caught fishing worms in the rain, but often heard you could fool the worms to come up by holding a serrated stick to the ground and rub another stick across the serrations.

Maybe a similar principle is at work here?

I spoke with other local collectors about their experiences collecting *Hypotrichia*, another rain-flying scarab. Most all of them reported collecting them in the rain or in traps that had been run during a rain. One noted exception is a small series collected by Mike Thomas at light on a clear night. After some deliberation I asked the most important question of all, "Were you running a generator?" He answered, "Yes"!

To add substance to this lengthening account, Fred Skillman (pers. comm.) was using a rotor-tiller in his garden when *Hypotrichia* males began to fly and mate with females that were coming out of the ground around him!

Always on the look out for new sampling ideas for rare beetles, I put 2 + 2 together and came up with 22. Why not go collecting and run generators like usual, but also run vacuum cleaners (those with beater bars preferred), belt sanders, concrete compactors, old laundry machines with an off balanced load, etc., and draw out some of these rare rain fliers!!

We have long known vibration adds to the act of procreation. Here is evidence that Mother Nature once again came up with the idea long before we did!

Ratcliffe & Jameson Receive PEET Grant from NSF

Brett Ratcliffe and Mary Liz Jameson (University of Nebraska-Lincoln) have just been notified that their PEET proposal to the National Science Foundation will be funded. PEET, an acronym for Partnerships for Enhancing Expertise in Taxonomy, is a relatively new program at NSF, and this is only the second competition.

Ten awards were made nationwide in this round. Ratcliffe and Jameson will receive \$740,000 over five years to train graduate students in the systematics of Scarabaeidae; create a key in both print and electronic format to the pleurostict scarab genera of the New World; complete monographic revisions of the New

World Gymnetini (Ratcliffe), Pelidnotina (Jameson), the genus *Platycoelia* (first Ph.D. student), and the genus *Trizogeniates* (second Ph.D. student); and conduct a phylogenetic analysis of the world pleurostict scarabs at the tribal level. (*Ed. note: here are not one, but two chances to be just like Dr. Art Evans, Ph.D.!!!*) Ratcliffe and Jameson are currently trying to recruit interested students. Part of the grant will involve extensive travel to collect and conduct research in the rainforests of Ecuador, French Guiana, and Amazonia as well as the Atlantic coastal forests in Brazil. Museum trips to study types will be conducted to Washington, Ottawa, London, Paris, Berlin, Amsterdam, Manaus, Belem, Rio de Janeiro, and Sao Paulo.

Congratulations to Mary Liz

Mary Liz Jameson (University of Nebraska-Lincoln) received her Ph.D. from the University of Kansas in May 1997. Her research involved a monographic treatment of the ruteline subtribe Rutelina. This research was published in the *Bulletin of the University of Nebraska State Museum*, Volume 14, in December, 1997.

The Trouble With Native Plant Identification

Much to the detriment of biology, very few naturalists have been formally educated in native plant identification. This is not without reason. Those who have taken college-level biology classes have heard horror stories about these courses. The first day, you are given a handout with over 500 botanical terms listed, and told there will be a test on them in one week. For the final exam you must identify several plants on a tight time schedule using a 2,000 page tome full of keys with no drawings. Miss one tiny character and you miss the proper identification.

This is regrettable. At night, many of us are pulling seldom-collected scarabs, with no published biology, off the host plant. Let's see now, it was that stickery bush about, oh, yea high, with, you know,

those really tiny little leaves, kind of like mesquite. Now, you say, could that be *Mimosa*? If so, that should go on the label beneath the bug, and on the 35 mm slide you took, and in your field notes. After all, this is information nobody else has.

The trouble is, the terms used to identify host plants are so technical. If we attempt to identify a plant, often we have to keep our place in the book with one finger, refer to the book's glossary (if it even has one), keep your place there with a second finger while locating the explanatory drawing (if there are any drawings at all) on yet another page, and then go backwards back to the key to figure out what the authors are talking about. You get the idea... it isn't convenient.

So, what we scarabologists need is a fairly comprehensive botanical glossary that we can put in a three-ring binder so it will lay flat. It of course should be illustrated whenever possible, but the drawings should be right next to the terms they pertain to—not on another page. The editors of *Scarabs* are proud to announce just such an item. We urge you to include this glossary in your field notebook if native plant identification is your weak point.

The Field Notebook Revisited

In *Scarabs* Occasional Issue Number 5, we supplied you with 8.5" x 11" sheets for field note forms of two varieties: a comprehensive double-sided form with room for drawings and extensive notes, and an abbreviated "Short Stops" form to keep a record of localities where not much detail is needed.

In addition, you may wish to include an equipment checklist listing all your gear, so that you can scan it to insure you have left nothing behind before you leave home on that big trip. Photographers may wish to include technical information on lenses, flashes or exotic techniques for handy reference in the field. Others may wish to include a list of dates and localities for seldom-collected Scarabaeidae in their area. If you bring along field guides or comprehensive monographs for identifying plants and trees, this botanical glossary should definitely be included.

Botany - What a Mess!

In the world of Scarabaeidae, about the only controversy is whether recognized subfamilies should stay that way or be elevated in rank to family status. Either way, the name stays the same, only the suffix changes: from -nae to -dae. Not so in botany. There seems to be little consensus.

In some texts, the sunflower family is called Compositae, in others, it is called Asteraceae. Some texts use the term carpel. Other texts consider it to be an archaic word and of no use in plant taxonomy. There are confusing terms, such as abaxial and adaxial. The dorsal side of the leaf is the underside, away from the stem. The ventral side is on top, facing the stem. It just seems backwards, because to many of us, dorsal means top, as well as back or backside.

Another problem is timing. It is the middle of July, and you just took a nice series of *Megasoma* on *Prosopis*. Now what species of *Prosopis* is it? You go to your trusty identification manuals only to find that they all specify floral characters to separate the species. That forces you to wait until March!

We suggest you carry your favorite plant identification book, as well as your personal botanical glossary, with you on all your outings. Familiarize yourself with the plant communities at your favorite collecting sites. If you have set up camp, and have some time to kill, hit the books and try to identify some material. You will only have to do this once per plant. Keep accurate field notes, label your slides and specimens accurately and become the envy of jealous coleopterists everywhere!

How to Obtain Your Copy

Because the glossary is large and must be mailed flat, we are not sending it out as part of the newsletter, as some readers may not be interested. To get your personalized copy of *Verborum Thesaurus Herbarius*, we ask that you kindly beg editor Barney, either by snail-mail at the address on page one, or via e-mail at bstreit@flashnet.com. State your name as you would like it to appear on the glossary. There will be only one mailing,

so please remember that this is a one-time offer. All requests must be in by December 1, 1998.

Further Reading

For those wishing a book complete glossary, there is *The Concise Oxford Dictionary of Botany* (edited by Michael Allaby, Oxford University Press, ISBN 0-19-286094-1. This 442 page softbound book is not illustrated, but contains over 5,000 entries. It lists for \$13.95.

Another highly regarded work is *Guide to Flowering Plant Families* (by Wendy B. Zomlefer, The University of North Carolina Press, ISBN 0-8078-2160-8). This 430 page book is profusely illustrated, as the author is both a botanist and a scientific illustrator. The major characteristics of each family are discussed and depicted.

Plant Identification Books

If you live in California, *The Jepson Manual*, (University of California, ISBN 0-520-08255-9), concerning the higher plants, is the book to buy. This is a big, heavy, technical book, spanning 1,400 pages. It is profusely illustrated. Cost is \$69.95.

For the states of Arkansas, Louisiana, New Mexico, Oklahoma and Texas you need *Trees, Shrubs, and Woody Vines of the Southwest* (by Robert A. Vines, ISBN 0-292-73414-X). This is another big book, cost is \$75.00.

For Arizona there are several books to choose from. Some deal with the Sonoran Desert (which spans parts of southwestern California, southern Arizona and northeastern Mexico), others deal with plants within the state boundaries.

The two-volume set *Vegetation and Flora of the Sonoran Desert* (by Forrest Shreve and Ira L. Wiggins, Stanford University Press, ISBN 0-8047-0163-6) was originally published in 1964, but has been reprinted several times, and is still available. Volume I spans 840 pages, including 37 blank-and-white plates mostly depicting habitats. Volume II spans 900 pages. There are no drawings in this very technical set, though Volume I has a few distribution maps.

A bit more user friendly is *Sonoran Desert Plants* (by Raymond M. Turner, Janice E. Bowers and Tony L. Burgess, University of Arizona Press, ISBN 0-8165-1532-8). There are no keys here. The 339 species are simply listed alphabetically according to their Latin name. Each species has a narrative account, a range map and an elevational profile. There are many photographs. This book spans 504 pages. Cost is ???

A very popular book is *A Field Guide to the Plants of Arizona* (by Anne Orth Epple, LewAnn Publishing Company, ISBN 1-56044-314-6). There are 853 color photographs in this 347 page, softbound book, which lists for \$24.95. What makes it attractive is that there are no keys. Instead, the photographs are logically grouped by appearance. For example: Trees: Compound Leaves; Wildflowers & Shrubs with Conspicuous Flowers: Irregular Pink to Reddish Pink Flowers, etc. You get the idea.

The technical authority for the state is *Arizona Flora* (by Thomas H. Kearney, Robert H. Peebles, and collaborators, University of California Press, ISBN 0-520-00637-2). There are 45 black-and-white photographs in this 1,085 page book, which has no drawings.

An Alternative Way of Buying Books

Because the Internet has become such a pervasive part of most scarabaeologists' lives, an update on Don Frack's excellent article "Buying Books" (*Scarabs Occasional Issue* Number 11, August, 1994) seems in order. There is now yet another way to buy books: over the Internet.

Now, the author of this little piece shall remain nameless, for reasons of undeserved embarrassment. Suffice it to say, though, that anyone who has had the distinct displeasure of meeting all three of the *Scarabs* editors knows that none of us are, well, chiseled from stone.

As luck would have it, *The Zone* by Barry Sears, Ph.D. was highly recommended to me by several friends who had lost weight and kept it off by using the diet regimen described in this

national bestseller. After picking up a copy for a little over \$13 at Price Costco (the cheapest source of books, but they have a very limited selection) I wanted to learn more. I was unable to locate the more recently published companion volume *Mastering The Zone* at any local bookstores, as Costco was out of stock. I next turned to my trusty computer.

Some time before, I had bookmarked an interesting site for Amazon Books (P.O. Box 80387, 1516 2nd Avenue, 4th Floor, Seattle, Washington 98108-0387, (206) 622-2335, or fax at (206) 622-2405, www.amazon.com). Amazon opened for business in July, 1995 and is specifically designed for ordering books over the Internet. They bill themselves as "The Earth's Biggest Bookstore," specializing in books in print. Their catalog has 2.5 million titles, and is updated daily. This database has most of the 1.5 million titles in print, and more than 1 million out-of-print titles still in circulation.

Once the title page loads, you can search out books by author, title, subject or ISBN (International Standard Book Number). These search engines are a little tricky. It took me several tries to locate some titles I needed. The ISBN search engine, for example, does not accept dashes (-) between the digits. It is the quickest way to find a book, though, if you know its ISBN.

On the plus side, a search through the big database is impressively fast. To quote *Time* magazine (April 14, 1997) "The site is so fast and responsive it almost feels alive; it's thrilling to have every title in the language at your fingertips."

Anyway, I easily found and ordered this book. The more popular titles are annotated and discounted. All titles have an estimate as to approximately how long it will take them to ship it to you—a nice added touch.

If you are counting, 400,000 titles are discounted. Selected titles are discounted 40%, other hardcover books 30%, and 20% for some paperbacks. You order by adding the book to your "shopping cart," from which you may remove any title at any time, should you change your mind. When you are done browsing, you can go

to checkout, just like a regular store. This popular title was offered at a 30% discount. The shipping is \$3.00 per order, plus 95¢ a book. Thus, it pays to order all the books you need in one shipment. Still, this was less than the local bookstore, given the added sales tax.

They have a password-protected system for giving them your credit card number. I simply used my e-mail password for easy recall. On your next order(s), the process is facilitated, as they already have your information. You need only type in your password. If desired, you can still use a different credit card. The next day, I received an e-mail stating the book had been shipped (in less than 24 hours) via priority mail. It arrived shortly thereafter.

After you place an order, and re-visit the web site, another neat item comes into play. Somehow, the web page even remembers your name, flashes you a welcome, and suggests a few books which it thinks might interest you, based on your past orders.

I have also ordered specialty books from them, including *Vegetation and Flora of the Sonoran Desert* (a two-volume set that is considered one book when figuring shipping costs) and *The Jepson Manual*. These kinds of books usually ship in 2-3 days. They were shipped to me via United Parcel Service.

Only volume II of the above-mentioned set was shipped. I left a rather scathing message (I called early, before they opened) on Amazon's toll-free customer service number. When I got home, there was a nicely-worded apology on my e-mail, explaining that the supplier had shipped them only the one volume. I had the other volume in my hands a few days later. This really *is* a people-oriented company.

Another interesting aspect of this perennial "Best of the Web" favorite is that authors and customers can review books and post these to the online database.

If you are fat and lazy like me (or maybe just lazy), try this site. They don't handle all titles, such as the Sciences Nat (*Beetles of the World*) series published in France, reviewed elsewhere in this issue.

No search method (title, author, or ISBN number) brought up any of these books. But, let's admit it—these are very specialized books! Nevertheless, I think you will be impressed with Amazon.com.

Not to be outdone, Barnes and Noble, (www.barnesandnoble.com) which calls *itself* the world's largest bookseller, slapped Amazon with a lawsuit. A New York court will decide who the largest book dealer is. By the way, a search for *Vegetation and Flora of the Sonoran Desert* located the title, listed at \$100 (which is incorrect) and selling for \$70. There was no mention about whether this is a two-volume set.

Big (and small) bookdealers use one of the biggest book wholesalers in the business: Ingram Book Company. Another new site that (like Amazon) has access to their huge database is Bookserve (www.bookserve.com). Ingram has now made it easy for online booksellers to connect to their database. Look for more and more online dealers and price cuts as competition becomes fierce.

A competing site can be found at www.codysbooks.com. Cody's Books in Berkeley, California is one of the nation's largest non-chain booksellers and an outspoken defender of its vanishing breed. Cody's physical store stocks some 140,000 titles, but it will gladly order any of the same 1 million-plus items that Internet megalith Amazon.com will. You may browse Cody's shelves by subject, or check out staff suggestions. Online ordering is easy.

Book Stacks Unlimited at www.books.com is a delightfully browsable, searchable, and secure site of 465,000 titles, most of which are discounted by 15 to 30%. Interesting value-added features include a downloadable library of e-books (from Shakespeare to Wilde) and daily RealAudio literary-world news.

What if your book is out of print? Any-Book International, located at www.anybook.com claims to have access to more than 1.5 million in-print books, but out-of-print titles are its specialty. Challenge the bookseller to find your obscure title, or ask for a complete bibliography on any subject/author, and get results within 24 hours via e-mail.

Every book you purchase from Any-Book—both used and new—comes with a full money-back guarantee. The downside is that there is no instant gratification at this site, unlike the instant searches at Amazon.com.

You may wish to try AcqWeb's Directory of Publishers and Vendors - Rare and Antiquarian Book Vendors. The list of booksellers they supply is annotated and extensive. Their web address is www.library.vanderbilt.edu/law/acqs/pubr/rare.html. From here you can go to a search engine called BiblioFind (www.bibliofind.com). They bill themselves as the "Internet's largest inventory of old, used and rare books, offered by hundreds of booksellers around the world." Simply type in the author's name, or/and keywords in the title, and they will up with a list of sellers. Each book has the price and a detailed description of its condition. You can also sell books at this site.

New Book Announcement

Atlas de los Escarabajos de Mexico, volume 1, by Miguel A. Morón, Brett C. Ratcliffe, and C. Deloya. 1997. (Sociedad Mexicana de Entomologia)

The first volume of this atlas presents diagnoses and illustrations of the 110 genera of Melolonthinae, Rutelinae, Dynastinae, Trichiinae, Valginae, and Cetoniinae of Mexico. There are commentary and illustrations for 253 of the 1,040 species known from Mexico. The other 787 species are listed. The book is 292 pages, 21X28 cm, softbound, and with 61 black and white illustrations, 54 tables, and 32 color plates with 253 color photographs.

Cost is U.S. \$50 and includes packing and shipping. This volume can be ordered with an international money order, postal coupon, or check to:

Sociedad Mexicana de Entomologia
Apartado Postal 63, Xalapa
Veracruz, 91000 Mexico.

The Brinkmann Spotlight: A Reliable Night Collecting Technique

by Delbert LaRue

While searching for Scarabaeidae around lights at night or during crepuscular activity, I, like many collectors, experimented with a variety of portable light sources (i.e., headlamps, flashlights or lanterns). Granted, the common flashlight or lantern will always have a place on your equipment list. Unfortunately, they never seemed to hold up to the distress of field use and were often inconvenient. If the batteries weren't dead, or the propane canisters empty, the bulb was blown or the mantle had to be replaced. Of course, that is assuming that you didn't Cunningham, and leave the equipment sitting in the driveway as you drove off in a frenzy, two hours late meeting a collecting partner. In a nutshell, I was frustrated with the unreliability of these gadgets.

In recent years, I have become dependent on a hand held, 12-volt sealed beam spotlight powered by a sealed-gel battery. The spotlight is manufactured by the Brinkmann Corporation, Dallas, TX (1-800-527-0717 or www.thebrinkmanncorp.com for a FREE catalog). I have faithfully used Model #800-1900-0, Black Max, which is a 400,000 candlepower spotlight with a 15-foot straight cord and cigarette lighter plug. It is waterproof (Attn: Pleocomaniacs) and is advertised as being visible up to one mile away. In addition, Brinkmann produces several models including a one million candlepower (#800-2500-0, Q-Beam Max Million) as well as a rechargeable model (#800-2605-0, Q-Beam Max Million). Prices range more or less around \$25-30 (U.S.). Most major automotive supply (e.g., Pep Boys or Kragen Auto) and super stores like Wal-Mart have them in stock. Or you could ask your friendly foreign auto mechanic to purchase one for you at a 600% mark up.

A vinyl carrying case (#802-1702-0) is available. For added safety during travel, I chose to construct a carrying case out of plywood and lined it with 1-inch foam. A small toolbox could be adapted for the same purpose. Brinkmann also offers an 18-gauge pigtail adapter for direct bat-

tery hook-up and replacement bulbs for their complete line of spotlights.

In the field, I carry a small 12-volt, 25-amp hour sealed-gel battery (purchased at an electronics parts house) in a canvas daypack. The spotlight is connected to the power source using a pigtail. This battery is not a motorcycle battery (or deep cycle either), which is just a smaller version of an automobile battery (with caps and acid, and the ultimate leaks, etc.). But a motorcycle battery would work too, I suppose. One of the advantages about a sealed-gel is that there is NO maintenance whatsoever (other than to recharge it after use, of course) and you can turn them upside down, sideways, stand them up, without the possibility of ANY leaks at all because they are completely sealed. So, you can carry them in a backpack without any problems.

All gel cells are 100% memory free, and all are deep-cycle in nature. How does this affect care and maintenance? Because there is no memory, these batteries can be fully recharged from any state of discharge. In other words, unlike batteries with memory, the battery does not have to be nearly totally discharged before charging. However, being deep cycle, they are best drained as much as possible before charging. If instead you charge your unit many times while it is still partially charged, the overall life of the battery will be shortened.

The commercial applications of these batteries are to power 12-volt video cameras. In fact, B & H (www.bhphoto-video.com) sells Bescor belts and packs. They come in a variety of configurations: various sizes (and therefore weights and amp hour ratings), chargers, and shoulder pouches or belts with Quick Release Buckles. They come with a standard cigarette lighter socket that the Brinkmann can plug directly into. Prices range from \$37.50 to \$197.95. Other companies, such as Empire Scientific, also make some nice systems.

The lighting power and greater visibility provided by the spotlight is incomparable to any portable lighting method I have used. This field technique has proven to be extremely productive during crepuscular and night collecting. Par-

ticularly, checking under street or building lights; searching the crests of sand dunes, or examining the perimeter of granite boulders for apterus tiger beetles.

Sealed Gel Batteries and a New, Sophisticated Battery Charger

By Ron Alten

(Your Friendly Foreign Auto Mechanic)

In various past issues of *Scarabs*, I have written about various power sources for portable black light setups. If you are going collecting for extended periods of time, and traveling by air, you already know that lead acid batteries cannot accompany you on the plane. Gel batteries, on the other hand, are sealed and are leak and spill free.

Interstate Batteries has a sealed gel battery, which is the only kind permitted on airlines. The model I most like is U1-31B. This battery weighs in at approximately 20 lbs., and measures 8" W x 7.5" H x 5.25" D. This is a deep-cycle battery.

Interstate also markets a computerized charger, the Interacter II model, Professional Series, (12 volts, 10 amps) which can be ordered with a dual-voltage switch on the bottom. This way, you can also charge your batteries using an overseas outlet putting out 230 volts, as well as 115 volts used here in the United States. This charger will automatically adjust itself to the battery connected to it, and charges it optimally. The Professional Series chargers include temperature compensation, and feature an internal preset "Battery Type" switch allowing the unit to be easily configured for use with gel cell, sealed lead acid or liquid electrolyte batteries. When I obtained one of these units for Editor Barney, I set this switch for him, because, as most of you know, he is *only* a dentist.

If a battery is dead, and cannot be charged, it is time to exchange it for a new one. Or is it? Batteries such as these (called "sulfated cells") have a covering of sulfates on the plates which prevents

the electrolysis that occurs during charging. The microprocessor-controlled circuitry in this unit is said to be able detect such a battery and "de-sulfate" the plates by delivering a specially configured charge. If it is at all possible to bring such a battery back to life, this is the charger that can do it.

If the leads to the battery are reversed, the charger will detect this cunningham-like condition and protect itself by not commencing the charging process. Once charging commences, the length of time the charger remains in the "Charging Mode" depends on the size and state of discharge of the battery. This is controlled by the charger's solid-state circuitry which constantly monitors the state of the battery and provides the correct charge automatically.

This unit is compact, measuring 6.5" W x 5.25" H x 6" D. It weighs approximately 4 lbs. There are seven LEDs on the front panel to indicate the status of the charging process.

ESA Meeting

The Entomological Society of America's 1998 National Meeting is in Las Vegas, Nevada, Hilton on November 8-12. After years of preparation (or was that procrastination), we finally persuaded the ESA to include a SCARABS themed conference during the meetings: the first annual SOLA Scarab Workers Informal Conference is on Sunday, Nov. 8, noon to 2 pm, in Conference Room 3. The Sunday time was chosen so all of the California Crew who might not want to come for the full meetings can still attend.

Scheduled speakers are Mary Liz Jameison (diversity in Rutelinae), Dave Russell (preliminary phylogenetic analysis of *Plusiotis* from the perspective of a gel jockey), and Caleb Gordon (cladistic analysis of Scarabaeinae). Several unscheduled speakers are planning to bring slide shows of scarab related topics, and Editor Bill promises some slides of *Megasoma punctulatus* lekking behavior in the field. Most of the meeting time will be available for participant input, so bring your interesting scarab slides or slides of interesting scarab

related collecting trips (compromising photos of your editors are especially encouraged).

We will also try to have a couple microscopes available to view any interesting specimens you would like to bring. If time permits, perhaps we will have to start a "stump the experts" segment.

BE THERE OR BE A CARABID!

Announcing an Electronic Directory of Scarab Workers

An electronic directory of world-wide scarabaeoid workers is now available at <http://www-museum.unl.edu/research/entomology/workers/index2.htm>. The purpose of the directory is to enable location of specialists and to facilitate communication as well as to provide some history about the workers who have provided the foundations of research on Scarabaeoidea. The Directory is being put together by Brett Ratcliffe and his colleagues at the University of Nebraska State Museum. Included in the Directory for each scarab worker is a photograph or painting of the individual, a short description of their scarab interests, addresses for regular mail and email and numbers for telephone and FAX. Some people also have listed their publications. The list is also searchable alphabetically by worker, by taxonomic category, and by geographical region. Deceased workers are included in the list as well. The list is continuously being updated and augmented, and any person who is publishing about scarabs is encouraged to join the list by sending an image (slide, photo, jpeg) and pertinent information to:

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Go check out the website if you have not seen it. It is pretty cool. And if you have seen it, check it out again because it is constantly changing.