

SCARABS

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How To Make Your Own Venturi Aspirator, or

"Blow, Blow... Suck is Only a Figure of Speech"

by Bill Warner

Those of you who have never used an aspirator to suck up Aphodiinae and other small scarabs off of black-lighted sheets no doubt have relatively clean lungs and a well-developed four-letter-word vocabulary from cursing as you crunched or missed the "little 'uns" in trying to get them into a kill jar. Those of you who use an inspiration aspirator don't cuss as much, catch more beetles, cough and sputter the next day, and may end up with emphysema. Simply put, aspiration is a great collecting technique and time saver, but inspiration aspirators SUCK. The problem is that moth scales and insect setae often pass through the screen filters of inspiration aspirators and go right into the lungs of the collector doing the aspirating. As any doctor who has treated a veteran of a USDA moth rearing facility can tell you, "dat ain't gud." Insect scales and setae are mostly chitin, a very stable polymer, and are loaded with biological antigens. Allergic reactions to these antigens are common, and there may even be some retention and "black lung" effect with chronic inhalation of scales and setae. The trick then is to create a vacuum in your aspirator without inhaling the nasties.

One way of doing this is to attach an aspirator to the end of a portable vacuum source such as a Dust Buster or similar machine. This works well, but is bulky, expensive, and 50% of the time you will remember that you need to recharge the batteries about two hours into that four-hour trip to your favorite collecting locality. 'Nuff said. The real need, then,

is for something that relies on a truly portable vacuum source: your lungs. So you say "Yo Bill, ya dat's all fine and good, but howdaya suck witout inhalin'?" This is a question that has been plaguing mankind for centuries and haunting young couples to this day, but was actually answered in 1791 by G. B. Venturi when he invented what has become known as the Venturi device. (And who said the Italians have never done anything good for Scarabology!)

A Venturi device works on the principle of friction of moving air on static air. Oversimplified, it could be said that the still air "sticks" to the moving air and is dragged along with it as it passes by. Since some still air is removed a vacuum is created. To use this effect to make an aspirator, one tube of a smaller diameter is inserted a very short distance into a tube of a larger diameter. When air is blown through the smaller tube, the air in the larger tube moves along with the blown air and creates a vacuum at the open junction of the two tubes (Figure 1).

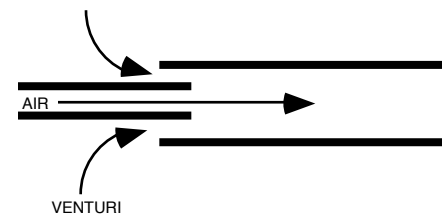


Figure 1.

This junction is then enclosed in a small screened enclosure to keep bugs from being sucked into the large tube, and the whole thing is enclosed in a larger chamber to hold the aspirated specimens. An inlet tube is inserted into the larger chamber so that one end is at least a couple of centimeters into the chamber to provide a baffle and make the captured

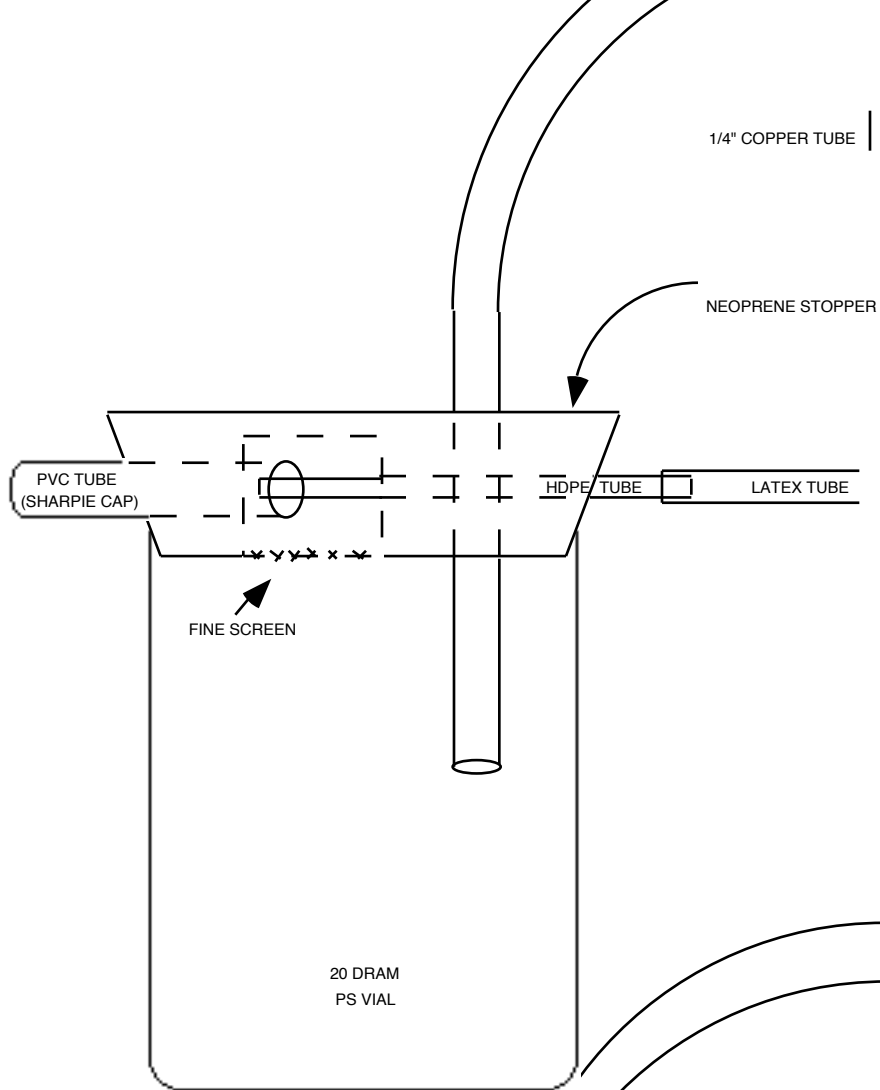


Figure 2.

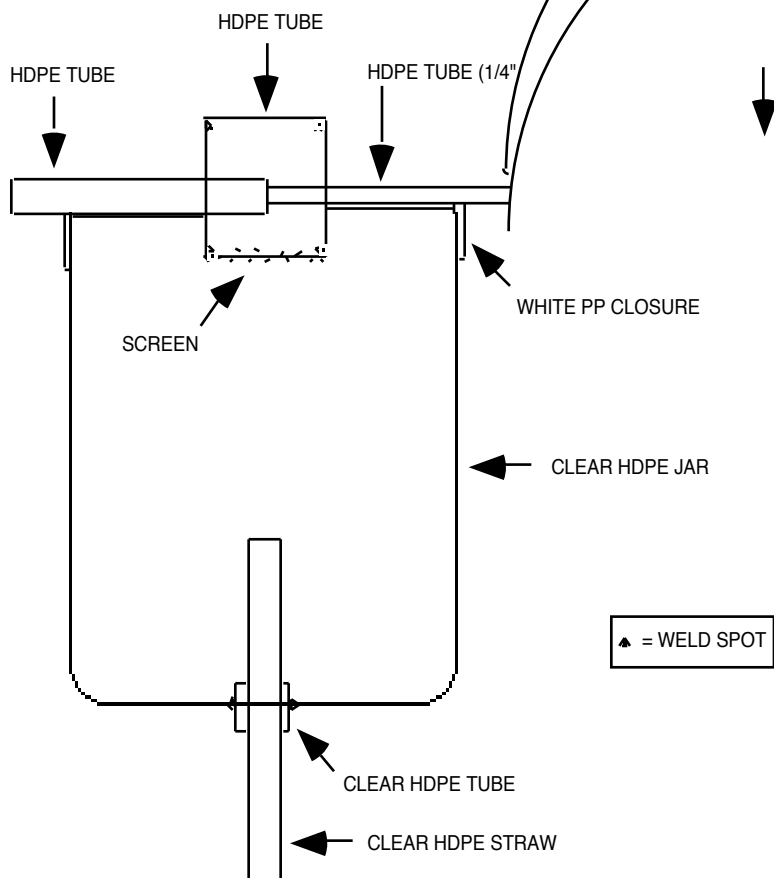


Figure 3.

specimens' chances of escape about the same as Rich's chances of bagging *Phobetus panamintensis*, and we all know how slender that is!

The first venturi aspirator I constructed (Figure 2) was made with a large neoprene stopper with a center chamber and tube holes painstakingly bored over probably an hour or two. If you have tried to drill neoprene you know what I mean. Both the venturi device and the inlet tube went through the stopper, and a 20 dram polystyrene vial friction fitted onto the stopper was used as the specimen chamber. The specimen inlet tube was 1/4" OD copper tubing, the "blow tube" was latex tubing hooked onto a modified plastic micropipet tip, and I carved up a "Sharpie" pen cap to make the outlet tube. A small patch of fine screen was simply stapled to the venturi chamber. This whole affair served me well for several years, except that occasionally the friction fit would fail and several minutes worth of aspirated beetles would be lost when the vial dropped off. This usually occurred just after I had sucked up some very rare species, or at the end of the night just after the lights were turned off!

After finally losing the first model in the field, I tried several modifications using HDPE (high density polyethylene) wide-mouthed jars with PP (polypropylene) screw cap closures. The latest "Mark V" model (Figure 3) uses HDPE tubing for the venturi and chamber, heat welded into the screw cap. The inlet tube is made from a "sports cup" straw inserted inside a short length of HDPE tubing for rigidity, then the entire length is heat welded into the bottom of a HDPE jar. For the screen on the venturi chamber, I have used either very fine mesh nylon screen, or laser-drilled stainless steel (used in TV picture tubes) heat welded onto the interior end of the chamber. All the heat welding and shaping was done with a Dremel (*Ed. note: the poor man's dental drill*), box knife, and a "Monocote" heat sealing iron. The Monocote irons are available at some hobby shops for about \$20.00, and can be used to seal plastic bags as well as melt PP and HDPE for assembly. The time necessary to make one aspirator is about one hour with practice. Figure 4 (on Page 3) shows the assembly steps needed.

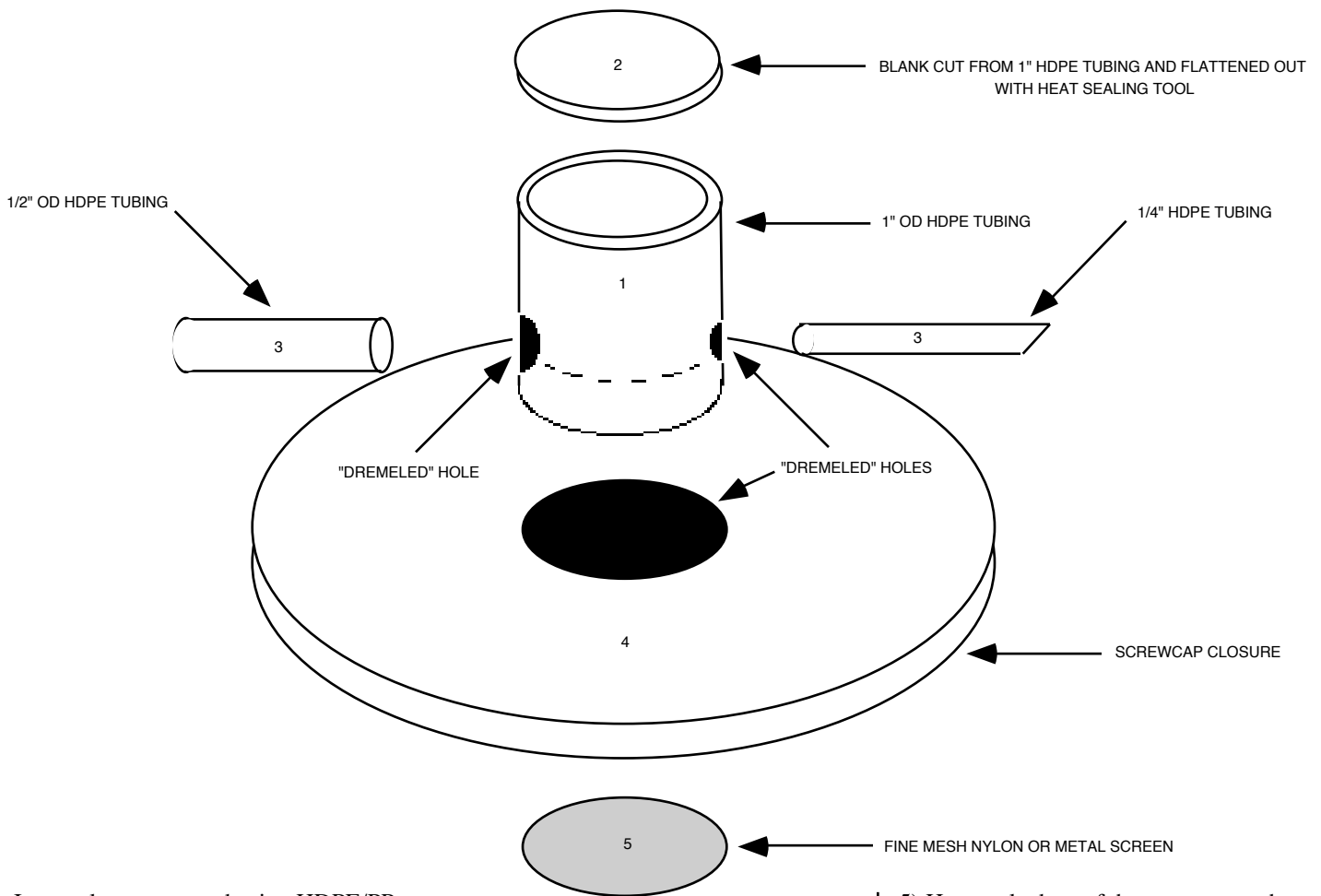


Figure 4.

I strongly recommend using HDPE/PP plastic jars and tubing for venturi aspirators because ethyl acetate will not melt them, so they double as kill jars. Once you are done aspirating beetles, you can either aspirate or pour a little ethyl acetate directly into the specimen chamber, and then just dump out the killed catch a few minutes later. The aspirator can still be used while the killing fluid is in the chamber, but if you use it continuously the ethyl acetate will dry out (be blown out of the chamber).

Instructions for the Construction of the Venturi Aspirator

HDPE tubing can be obtained at hardware stores or through scientific supply companies. HDPE/PP jars/closures can be obtained at your local plastic packaging supplier. Some will even give you a sample or two for free!

Better yet, simply recycle an old container. The type of plastic can be identified by the recycle logo. Look for a "2" (HDPE) or "5" (PP) in a triangle of

arrows on the bottom of the jar. Nearly all plastic jar closures are PP.

1) Cut a 1.5-2" long piece of HDPE 1" tube for venturi chamber and drill a 1/2" hole about 1/3-1/2" from one end. Drill a 1/4" hole on the opposite side, centered in the middle of the 1/2" hole.

2) Cut a piece of HDPE flat stock (or a piece of the side wall of 1" tubing as in "1" above, flattened out with a heat seal iron) to make an end cap for "1."

3) Cut a 2" piece of 1/2" HDPE tubing and a 2 1/2-3" piece of 1/4" HDPE tubing and fit through the holes in "1" such that they meet in the middle of "1" and the 1/4" tubing is inserted into the larger tubing 3-4 mm. Heat seal these into place.

4) Heat seal "3" into the closure such that about 1/4" of the venturi chamber extends into (through) the bottom of the lid (this is the dotted line on part "1" in Figure 4). Heat seal "2" onto the top of "1."

5) Heat seal edges of the screen onto the bottom of "1" to complete the venturi device. Blow through the 1/4" tubing to check for vacuum in the venturi.

6) Slide the straw through a 3/4" long piece of 1/2" HDPE tubing and heat weld them together. CAUTION: Do not melt or damage straw as internal surface must remain round and smooth.

7) Dremel-out a 1/2" hole in the HDPE jar, insert "6," and seal the 1/2" tubing to jar (see Figure 5 on Page 4). Use a "natural" (clear) HDPE jar if possible.

8) Attach a length of vinyl (3/8") or latex tubing to the end of the 1/4" tubing and test assembled unit.

Entomological Research Publishers

Robert Duff (the father of "duffing," remember?) is one-and-the-same as Entomological Research Publishers. His Directory of Entomological Services (78 pages) has listings for just about everything and everybody that has any rela-

"NATURAL" (= CLEAR) HDPE WIDEMOUTH JAR

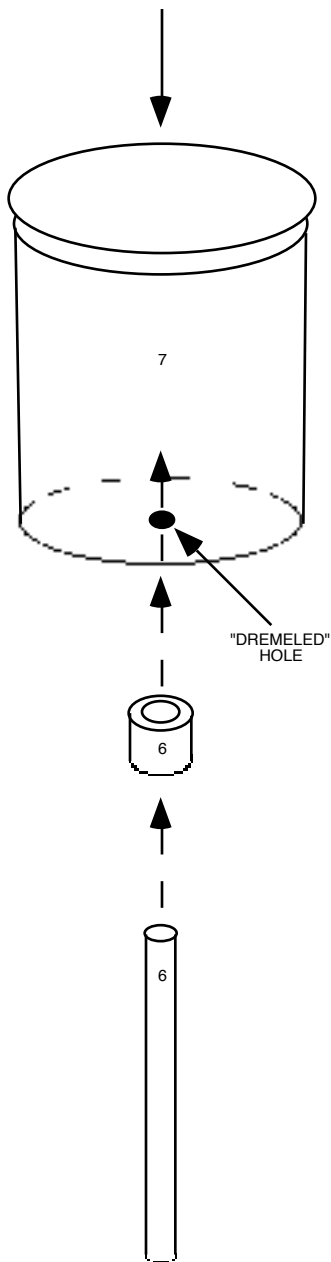


Figure 5.

tionship to entomology. Book sellers, professional organizations, dealers in live and preserved insects, suppliers and more are listed. The Directory is worldwide in scope.

Another item that may be of even greater interest is the very thorough *The Scarabaeidae of America North of Mexico - A Reference Guide and Literature Compendium*. Part III, which is 97 pages long, is a preliminary bibliography. It contains a listing for every paper or book Bob could locate that mentions a scarab from north of the Mexican border. Although Bob says he has not revised it in some time, it is still useful.

For those of you interested in accumulating a matching set of literature to accompany your collection, this booklet will prove invaluable. We recommend simply Hi-Lighting the papers that you have so you can keep track. By simply perusing this guide, you will probably locate several interesting papers of which you were not aware. There are numerous papers not listed, but after all, this work is preliminary. Although the most recent papers listed are only 1985, this guide should serve well those striving to obtain sets of papers from the likes of Cartwright, Fall, Horn, LeConte, Robinson and Saylor.

For updated information on prices and ordering instructions, write to Bob or ERP at 9519 Casanes Avenue, Downey, CA 90240.

Archival Storage of Photographic Prints, Slides and Negatives

It has long been known that acids and lignins found in regular paper and envelopes will destroy negatives, slides and other printed materials over time. Therefore, special acid-free and lignin-free storage envelopes are offered for archival purposes. These are expensive, however, and are opaque, making it somewhat inconvenient to see what is inside the envelope.

A few years ago, polyvinyl chloride (PVC) sheets and jackets were sold for storing these materials. The advantage was they allowed one to more easily view what they stored. However, PVC emits hydrochloric acid, and is a brittle polymer, necessitating plasticizers and stabilizers. These chemicals have a high affinity for film emulsions. Many photographs were lost before the truth was known.

Now, PVC has been replaced with polycarbonate, polypropylene and polyethylene. Subscriber Josef Beierl (known more for his extensive and beautifully labeled and curated world-wide cerambycid collection than his background as a research chemist) tells us to beware. Polycarbonate, also known as mylar, is a fine material, albeit expensive. Polypropylene and polyethylene are less expensive. However, lubricants are used in the

extrusion process when these materials are manufactured. Lubricants are contaminants and *may* damage your precious emulsions over time. Josef feels that it will take ten, perhaps twenty years or so for people to realize the problems that might be inherent in these materials. So, beware of not only plasticizers but also lubricants, and play it safe. Aren't we lucky that we coleopterists are such a close-knit group, sharing information freely? This puts us way ahead of the general public.

Therefore, if you want to be on the safe side, you are left with very few options for storage of photographic materials. Prints and negatives must be stored in either acid-free paper or mylar envelopes or sleeves. These are available from University Products (1-800-628-1912) as their Deluxe Photo Organizer Storage Kits. Other dealers sell similar kits, which are a convenient way to go. Beware, though, they also sell polypropylene and polyethylene products in kit form.

Slides are more of a problem. We could not locate mylar pages for slides. Until these become available, it seems best to store slides in metal boxes. Logan makes a metal box for under \$12 that will store up to 750 slides. Adorama (1-800-223-2500) sells these. These are not ideal because you cannot easily view the contents of the boxes, but they are truly archival, space-efficient and cost-effective. There are expensive metal cabinets available for larger collections.

BioQuip

It has come to our attention that there are a few readers who are unaware of BioQuip Products. Owned and operated by Richard and Louise Fall, BioQuip is starting its 46th year in business. The owners and employees are all the best of people, and have been old friends to many. BioQuip features a full line of entomological storage systems, collecting gear, books and scientific supplies. The 1992-1993 catalog is 126 pages. Their address is 17803 LaSalle Avenue, Gardena, California 90248-3602. Telephone: (310) 324-0620, FAX (310) 324-7931, Telex: 214943 QUIP UR.

The Bugroom

It came as a double shock: scarab he-men and confirmed bachelors Alex Reifschneider and Doctor Arthur V. Evans, Ph.D. announced they were getting married, then went out and actually did it. Not to each other (these are former roommates, after all) but to very pretty blondes-Alex to Christi and Art to Mary. As these to bugologists prepare for the future, the question of living quarters comes to mind. With a lady in the house, a bugman must have a sanctuary: the bugroom. Now, with the extra income from a hard-working wife (what other reason is there to get married?) this bugroom can be custom built. Here then are some considerations to take into account when designing your ideal bugroom.

The term bugroom is actually a misnomer. As presented here, it is a series of rooms adjoining the bugroom *sensu strictu*. Let us now take a guided tour through these adjacent rooms.

Visiting specialists from around the world will need a guest room. With a full bath and private study, the king-size bed is mandatory should the spouse also visit.

The library is a separate room. Bookshelves extend from the hardwood floor to the detailed hardwood ceiling, complete with sliding ladders. A special unit with glass doors encases the rarest editions, such as your complete set of color *Biologia Centrali-Americana*. File cabinets house your set of individual papers. A carved oak table with a reading lamp and photocopy machine (for the guests) adorn the library's central area.

A projection room, with enough padded, reclining loungers to seat a sizeable group of friends, is next to the library. Complete with slide and video projectors, many extraordinary and good times will be had here, because there is no rule that the presentations must be entomological in nature.

Hot dogs, popcorn and soft drinks are prepared in a small utility kitchen, with its own pantry, refrigerator, oven, microwave and sink. The 19 year-old French

maid is optional, depending on how understanding your wife is.

The restroom is customized with a cupboard full of special toilet-seat covers plus a freezer. These covers fit snugly over the toilet seat and sport a gauze catch net. No more getting on your knees and rifling through toilet bowl water with your bare hands (aka "cunninghaming") to capture that elusive dung trap bait! Simply remove the cover, pop it into a container and into the freezer, where it awaits your next expedition.

Next is the rearing room, which is temperature and humidity controlled. Gro-Lux lamps, in conjunction with skylights, help light growing foodplants. Bins hold fossorial beetles such as Scarabaeinae, others hold Aphodiinae and rare Geotrupinae. The resultant pristine specimens and secret life histories are a testimonial to your cleverness and brilliance.

A small wine cellar holds about 900 bottles wine, several dozen blocks of the finest cheeses and exotic crackers. This room may appear a trifle frivolous to some, but there are times when it would be handy. After a group of friends return to your place from a trip with one of those hyperactive, nerve-racking collectors like, say Dave Russell, a little wine and soft music would calm everyone back down. This is the only room where cigar smoking (a new-found ritual of several west-coast collectors) would be permitted.

A maproom holds an extensive collection of ancient and modern versions of world-wide maps, allowing you to locate old collecting localities and plan your next trip to the tropics.

An optional room for those interested in photography would be a darkroom where publication-quality developing and enlarging are performed. A look inside shows visitors a glimpse of those *National Geographic* and *Nature* articles for which the publishers have been hounding you.

Adjoining the darkroom is a prep room where prints are custom mounted. Slides are mounted, sorted on a large viewer and stored here.

A walk-in store room houses PDB, ethyl acetate, cyanide, alcohol, paper stock, computer and various stationary supplies.

This entire complex of rooms is next to your garage for ease in loading and unloading bugs and equipment from your two vehicles. One is a van for those longer excursions, the other is a four-wheel drive jeep for local trips.

The main room sports sky lights in a high, vaulted ceiling, giving the room an open, airy look. The collection itself requires an entire wall. The cabinets are double-sided steel enclosing a thick layer of asbestos for the ultimate in protection. Perfectly balanced submarine-style steel doors tightly seal these cabinets from museum pests and indoor collectors. Polarized (to eliminate glare) halogen lamps shine down from the ceiling to make viewing the collection a visual delight.

On the opposite wall are yards and yards of clean, uncluttered countertop. Where is everything? Built in: the Zeiss stereo microscope, camera equipment (copystand and macro accessories), pinning and labeling paraphernalia "pop-out" from the counter below or the wall behind. Only the top-of-the-line Macintosh computer and laser printer sit in plain view.

A large desk is in room-center, with all lighting, temperature and music controls at your fingertips. A leather couch with matching chairs face the desk. A healthy, potted *Ficus* gives the room its final touch. Next to the desk, a spiral staircase leads to a loft under an acrylic bubble-dome. Here is your special retreat for reading or just relaxing under the stars.

Computer Databases and Coleoptera Literature

If you are interested in any group of Coleoptera, whether it be simply collecting or also biology, you need a good set of accompanying papers, articles and books so that you can identify your specimens and learn what has already been discovered about them. If you deal with all subfamilies of Scarabaeidae, espe-

cially world-wide, the amount of literature for all those taxa can soon become unwieldy.

Why not harness the power of the computer to organize and manage that ugly pile of papers? Setting it up will take some time, but you will be rewarded with nearly instantaneous information retrieval. For example, if you have 700 papers, your computer can give you a list of those dealing with *Pleocoma* in less than one second. These papers could then be divided into those that deal in biology and taxonomy.

What follows is only one way of accomplishing this goal. You should easily be able to adapt these suggestions to your own needs. First, a trip to the stationary store is necessary. Buy a box or two of straight-cut manila file folders and an equal number of adhesive mailing labels suitable for your printer. There are special labels for dot matrix printers (with pin-feed perforations) as well as laser printers (with special adhesive that will not soften from the heat inside the laser printer). Avery labels are the only brand to purchase. Others can come unglued inside your printer and cause big problems.

Each paper gets its own folder. The label that goes on the folder receives three pieces of information: the author(s) last name(s), the year of publication, and a "series" number, which is usually the letter "a." These are used to separate papers published by a given author in a single year. If the same author published a second paper in a given year, that paper receives the letter "b," and so on. The record so far is held by the late Mark Robinson. In 1948 he published seven papers, so the labels for his papers would read "Robinson, 1948a" through "Robinson, 1948g."

File these folders alphabetically in a file cabinet. With this scheme, if you want to see, say, all of Cazier's papers, just go directly to the file drawer and look in the "C" section - no computer needed.

It is beyond the scope of this article to discuss choosing a computer - most of you have probably purchased one already. It may interest you to know that this newsletter is now written and printed

on the Macintosh, due to its ease of use. Both MS DOS, Windows, and Macintosh have powerful database software. For literature management, use a good flat-field (as opposed to relational) database. Relational databases are complicated and expensive, because the files within the database can exchange information. This kind of power is not needed for our purposes because our database contains only one file.

In the Macintosh world, for example, there are two kinds of flat-field databases: one which is disc-based (the extremely popular File Maker Pro from Claris) and one which is RAM-based (Panorama II from Pro-Vue Development). Of course, IBM clones offer the same two classes of database software under different brand names. Here are some pros and cons of each type:

Disk-based: The size of the database is limited only by the unused space on your hard disk, and disk space is the most inexpensive form of storage. When you do a search, the computer searches each record on the disk.

RAM-based: The size of the database is limited to the amount of random access memory you have available. In other words, when you start your database program, the program and your database records are read off the hard disk in their entirety and stored in the memory chips. This may seem like a severe limitation, but memory chip prices have fallen drastically, and the database records do not take up much memory. For example, that file mentioned above for 700 papers uses only about 171k. One disadvantage of this type of database is that, because everything is in memory, if you suffer a power blackout, all work performed since your last "Save" is lost. The advantage is lightning-fast speed during Searches. There is no way File Maker Pro can search through 700 records in under a second, because the hard disk, which is a mechanical (versus the memory chip, which is an electronic) device has to physically move to each record during a search.

Here is a list of suggested fields you can use to design your record template. A sample record using this template appears as Figure 6 on the following

page. As mentioned above, the first three are a necessity in order to match the record with the label on the folders:

1. Author(s)
2. Year Published
3. Series

Naturally, we want to know what the article or paper is:

4. Title

Next is a section of three fields that tell more about the paper:

5. Type
6. Document Location
7. Geographical Area(s)

The "Type" field can consist of any one or number of items, such as: Distribution, Biology, Taxonomy, Biography, Checklist, Biogeography, Collecting Technique, Curation, and of course, Miscellaneous.

Document Location is an optional field you may wish to include if you have a lot of papers. It simply tells you where you put the paper: File Cabinet, Bookshelf, etc.

Geographical Area(s) is another optional field that delineates the scope of the work: Nebraska, South Africa, New World, etc.

The next section is truly the heart of the database:

8. Groups

It is here that you type in the name of the beetles covered in the paper. It is up to you whether to go the level of subgenus or even species or not. We suggest you stay at the genus level. You must also decide whether to include just those genera dealt with in the work, or to include any genus even mentioned. Many taxonomic papers mention genera with affinities to those covered in the paper, but do not actually say much about them. Should you type these in as well?

We suggest you do if you write papers yourself and wish to reference even a mention of a particular beetle. On the other hand, if you are just a regular

“schmoo” and simply want basic information, enter only the genera that are the primary focus of the paper.

Most papers include four or fewer genera. Others, such as *The Nesting Behavior of Dung Beetles (Scarabaeinae) An Ecological and Evolutionary Approach* contain nearly too many to count.

Last is:

9. See Also

Often there are related papers that are tied together. For ease of use, enter them in this field. For example, (again referring to Figure 6), to key out that dung beetle from Panama, you will use: Howden & Young, 1981a, “Panamanian Scarabaeinae: Taxonomy, Distribution, and Habits.” The See Also part of the form has a related article that covers additional species not listed in the earlier paper: Howden & Gill, 1987a: “New Species and Records of Panamanian and Costa Rican Scarabaeinae.” This field will be used mostly for larger works, including checklists, which often have several subsequent addenda.

If your database is set up in this fashion, you can conduct searches in a number of ways. Your searches must be done one at a time. Most of the time you will simply search for a genus in the Groups field. If the search is for a genus such as *Phyllophaga*, the resulting group of papers your database comes up with can also be quite large. You can further diminish the number of papers (containing the one you are looking for) by searching in the Type field (does the paper I am looking for deal with the Taxonomy of *Phyllophaga*?). The group can be perhaps further narrowed by searching for a specific Geographic Area. Let’s see, there was this paper dealing with the taxonomy of the *Phyllophaga* of Arizona. The computer comes up with: Sanderson, 1958a, “Faunal Affinities of Arizona *Phyllophaga*, with Notes and Descriptions of New Species.”

Each time you enter a group of papers into your database, you may wish to have the computer make the label for you. Many databases (Panorama II included) have built-in templates for the various Avery labels sold. All you have to do is

<p>Author(s): Howden & Young</p> <p>Year of Publication: 1981</p> <p>Series: a</p> <p>Title: Panamanian Scarabaeidae: Taxonomy, Distribution, and Habits (Coleoptera: Scarabaeidae)</p>
<p>Type: Taxonomy</p> <p>Document Location: Bookshelf</p> <p>Geographical Area(s): Panama</p>
<p>Groups: Eurysternus, Megathoposoma, Canthon, Pseudocanthon, Deltocilium, Cryptocanthon, Agamopus, Pederidium, Bdelyrus, Onthocharis, Scatimus, Uroxys, Ateuchus, Canthidium, Onthophagus, Ontherus, Dichotomius, Copris, Phanaeus, Sulcophanaeus, Coprophanaeus, Oxysternon</p>
<p>See Also: Howden & Gill, 1987a: New Species and New Records of Panamanian and Costa Rican Scarabaeidae (Coleoptera: Scarabaeidae)</p>

Figure 6.

position the fields on the top line of the label template, something like:

[Author(s)], [Year Published][Series]
 Notice that a comma and space have been added after the Author(s) field.

When adding new records, **Hide** all the other records, or **Select** only the blank record. The type in your new papers and print out your labels. This way, your printer will print labels only for the new records, instead of all your records. Once printing is terminated, you can **Select All** or **Unhide** your other records.

In summary, you should only attempt this project if you have so many papers that you cannot remember what is where and even what you have. Half the problem is setting up your form. Hopefully, this article will make that part easy. The

difficult part is data entry. Remember, GIGO: Garbage In, Garbage Out. Your database can only be as good as the information you type into it. Scan each document carefully and type in the needed data accurately. Once this project is completed, you will have an iron-like grip on your literature collection. Its value to you should double because you can locate data within your literature library with ease.

One last warning: make at *least* one backup copy of this valuable file each time you add new papers to it or modify it in any way. When compared to the effort spent setting up the database and entering data, the time and cost of backing up is next to nothing. Many authorities advise making three backup copies, because a faulty disk drive can ruin a disk or two before the cause is known.

Editorial Shake-Up

Astute readers may have noticed the new format of the front page, with a prominent new blemish in the center of the editors listing.

Just how a bitter power struggle could occur over a small-time newsletter that has an erratic publication schedule and is mailed out free-of-charge is beyond the comprehension of the *former* editors. Nonetheless, it has happened.

Hopefully, editor Bill will be able to infuse *Scarabs* with some credibility at long last, if not flash and pizzazz. Bill's writing is easily discernible by checking for fancy punctuation. For example, check it out after the word "blame" in the following section. Welcome, Bill!

Bill's Rebuttal

In a move akin to the technician's decision to "pressure check the system" at the Chernoble reactor a few years ago, your editors have agreed to add me as a third editor. This event occurred after slight armtwisting (read blackmail), intense negotiation and several feeble attempts at bribery.

I finally had to give up on my demand of putting small, flashing lights next to my name on the masthead because of Rich's complaints that they would clog up the printer, and instead settled on Dr. Barney, D.D.S.'s promise of adding a small microchip that, when the newsletter was opened, would play a computer rendition of Robert Goulet singing *Climb Every Mountain*. Barney says this practice will begin "as soon as the technology is here."

The reason given by your former editorial duo for their desire to become a trio was "We want to inject some new blood into the newsletter" (or was it "spread the blame"?). Now, to me, this sounds like a quick way to pick up a slow virus, but I trust Rich and Barney's judgment, as long as I get that Bob Goulet thing. And besides, the editors were becoming a little too polite to eminent scarabologists, leaving all the good-hearted jabs for the deserving but already well-jabbed.

Skippy, Brett, Henry, Mary Liz, Bob and the rest of you that have so far escaped, be warned...BOO-OO-OO-OH-OH-AH-AH-AHHH!

So, as the "first act of new blood" your editors would like to announce a new item to begin next issue, the "Dr. Brett Ratcliffe, Ph.D., Memorial Serious Section." This column will be a space for any item of serious newsworthiness—meeting notices and so forth—which the submitter would prefer to be left alone, unimproved by the normally very relevant editorial annotations we have become accustomed to seeing in *Scarabs*. NOTE: The editors reserve the right to edit for terseness and dryness all articles submitted to the DBRPDMS Section.

Thanks, Barney and Rich, for your confidence (or whatever the real reason) in me. I will do my best to help you uphold the high literary standard for which *Scarabs* is known.

Biologia Centrali-Americana

The well-known *Biologia Centrali-America* or, Contribution to the Knowledge of the Fauna and Flora of Mexico and Central America, edited by F. D. Godman and O. Salvin, London, 1879-1915, is a series of manuscripts complete in 57 volumes with 1,270 plates. A very few volumes were individually hand-colored by artists. The commoner versions had black-and white plates. These books dealt with natural history. The colored Coleoptera volumes, as mentioned in *Scarabs* Occasional Issue No. 6, are virtually impossible to obtain.

A company has announced the reproduction of four volumes of this series, which are as follows: the Buprestidae (Volume III, Part 1) which also contains Dascilidae (Serricornia), Elateridae, Thorscidae and Eucnemidae; the Cerambycidae (Volume V) which also contains Bruchidae (Longicornia); the Cicindelidae (Volume I, Part 1) which also contains Carabaeidae (Adephaga); and the Scarabaeidae (Volume II, Part 2) which also contains Lucanidae and Passalidae (Pecticornia, Lamellicornia). Other vol-

umes will be reproduced on a continuing basis.

Nearly every scientific paper dealing with Central American and even Mexican Coleoptera cites one or more volumes of *Biologia Centrali-Americana* in its bibliography. Indeed, it is difficult to identify specimens without them. Because of their continuing importance in many fields of natural history, it can truly be stated that these great works have withstood the test of time.

A further notice about these reproductions will appear in the next issue of *Scarabs*. For ordering instructions or additional information, contact L.A. Out-of-Print, On-Demand Publishing, Inc., P.O. Box 10716, Burbank, California, 91510-0716 U.S.A. Telephone (818) 761-1145, FAX (818) 761-0763.

A Portable Thermometer-Hygrometer

by Ron Alten

Micronta has made a combination thermometer and hygrometer which runs on two "AA" batteries. Meant for indoor use, it should also prove useful in the field. It is the size of a larger hand-held calculator and employs a liquid-crystal display. It reads temperatures from 32 to 122 degrees Fahrenheit, but has a switch for Celsius readout. The relative humidity range is from 25% to 95%.

This highly portable unit may prove useful in determining flight behavior of several hard-to-figure scarabs, *Pleocoma* among them. Putting this kind of environmental data on pin labels should increase the value of almost any beetle. This item is available from Radio Shack (Catalog No. 63-844) for \$29.95.

In the Next Issue...

Highlights of Dave Russell's incredible 2,300 mile quest for *Polyphylla*! Cheap blacklight traps!! Perhaps even that "thing" under editor Bill's address!!! Be the first to submit to the DBRPDM Serious Section!!!!