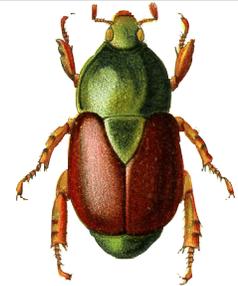


SCARABS



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Trapping Scarabs from Gopher Burrows - A Pictorial

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Several different types of gopher traps. Left to right are: Victor, Death Klutch 1 (DK1), and The Gophinator. Macabee traps are similar to the Victors.

The DK1 traps seem to be a little large for *Thomomys bottae* but

may work better on the larger gopher species in the midwest. The new Gophinator traps are all stainless steel and have a polished trigger wire. While they are more expensive than the other traps, they have worked the best for the author.



Gopher Trap Schematic. This photo shows it all. At the bottom is a tunnel probe, built with a foot rest on one side to make it easier to insert into the ground. There is a “T” handle on the top. This is the author’s personal hardened steel probe which he had built for him by a friend who is a welder. The tunnel has been breached and opened up. Gopher traps are inserted into as many tunnels as you can find - typically two, but sometimes 3 or even 4 may intersect in one place. The traps should be pushed as far into the tunnels as possible to keep the gophers from pushing dirt into the pitfall. Cables are attached to the traps so a gopher cannot steal your traps. These are anchored above the surface with a large spike. The pitfall is placed under the opening, with a flat “stage” around it’s outer rim for loose soil to fall onto. The floor of the stage is built up level with the edge of the pitfall so it is easy for any insects to walk right in. This entire surface is level with the bottom of the tunnels. A portion cup of bait is suspended over the pitfall. In this case, dehydrated deer dung is being used. The cutaway shows the actual size of the breach and how the traps are positioned - they could be pushed into the tunnels farther than they are in this photo. Everything is ready to add fluid - propylene or ethylene glycol in the pitfall and hot water in the portion cup to brew some “deer dung tea.” A cover board is placed over the breach and the soil from your excavation is placed on top, and around the edge to seal it up. In a week (or more) the cover board will be removed to (hopefully) reveal a good catch of burrow dwelling insects and perhaps a gopher or two!

Bill Wishing for a Longer Probe...

See the grimace on his face? Here is a shot of Bill Warner using a large tweezer as a soil probe to look for tunnels near a gopher pushup on Antares Road near Kingman, Arizona. When looking for tunnels you need to probe the soil around the edges of the pushups - usually within 12-24 inches. When you feel the probe suddenly lose resistance, you have found the tunnel! Dig in this area to see if you have actually



found an active tunnel or just very loose soil from prior digging activity. Deeper tunnels are better than shallow feeding tunnels and the closer you can get to the gopher's nest chamber and latrine the better your insect catch will be! Therefore, try to find pushups that have refuse mixed in with the soil. You must carefully feel around the edges of the hole you dig to find the tunnels, as they will usually get blocked with dirt when you dig the hole. Once you find the tunnels you must carefully excavate a larger breach into it, and clear out any dirt that may have fallen back into the tunnels.

Bill with All the Good Stuff!

Bill has found his tunnel, he has excavated a nicely-sized breach into it - but not too big that his cover board will not fit. He has fit one of his deli cup pitfalls into the bottom and put on the cover board in a "trial fit." This is important because it usually knocks a bunch of soil loose from the surface and walls of the breach - right into the pitfall cup! Now he can remove, clean and replace the pitfall cup.



His antifreeze is ready to put into the pitfall. Just 1/4" to 1/2" in the bottom will be sufficient. It looks like a promising setup! You can't see his head, because Editor Barney cut it off, but Bill is wearing his nice straw "coolie" hat to keep the intense Arizona sun from burning his tender "office worker" skin. A note about cover boards - if you're working in an area with cattle or horses, and want to keep on good terms with the rancher, use thicker cover boards than this! The author likes 1/2" plywood siding which can often be obtained for free as scraps from a mini-barn manufacturer (window cutouts).



This is the Real Thing, Boys...

None of that sissy art director stuff! No canned corn. No chocolate pudding. Nope, this is the real thing - Bill's Favorite Stuff! Bill, somewhat carefully, uses a couple of short sticks like chopsticks (remember that Coolie hat? See below, and also *Scarabs* #31, page 12) to scoop some human dung out of a jar that he keeps handy for just such occasions. He is packing that

portion cup full and will suspend it over the pitfall trap that he's already placed in the floor of the stage. Bill likes to make up wires that are bent into a perfect circle and are sized to fit under the lip of the portion cup. The wires have a long wire tail left on one end which can be stuck into the soil on the side or bottom of the stage. Bill likes to keep these circular wires and re-use them - probably so he can spend more time with his Favorite Stuff. Others of us just push the wire through the sidewall of the portion cup and crimp it over the lip. Everything gets trashed when we dig up the trap later. The author uses a torch to heat a piece of wire and burn holes through a large number of cups at home before a trip. One of The Editors reportedly uses some kind of dental tool to drill holes through his cups...



The author (watching from a safe distance upwind) and Bill (in his high-style Coolie hat) finishing up the last trap. This photo was taken by Editor Barney who was the only one sane enough to watch from a VERY SAFE distance! Those expensive Nikon telephoto lenses come in handy for lots of things besides wildlife photography.

Scarabs in the Dunes of Northern France

by Olivier Décobert

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In the North of France where I live, there are many places along the coastline with long dunes, where some special scarabs can be found. They are sometimes very difficult to observe elsewhere and often don't exist outside of these sandy areas. Good habitats can be found between the coast towns Dunkerque and Berck-Plage (Photo 1).

The most spectacular species is a member of the subfamily Melolonthinae, *Polyphylla fullo* Linné (Photo 2) This male was collected near Dunkerque). It can measure 40 mm and appears between May and September.

Another cockchafer is sometimes very common on the coast, in June or July: *Amphimallon majalis* Razoum. (Photo 3). Contrary to *Polyphylla fullo* L. which only lives in sandy regions, it can be found in other habitats, far from the sea. It is much smaller than its cousin, with a size between 10 and 14 mm.

The little *Aegialia arenaria* F. (size 4 to 7 mm) (Photo 4) sometimes appears very early in the year. I remember seeing a lot of them in the dunes of Merlimont, south of Boulogne, at the end of February 2008, because of an unusual temperature for this period (about 16 °C). It belongs to Aphodiinae.



Photo 1: Dunes near the town of Dunkerque – North of France.



Photo 2: *Polyphylla fullo* Linné.



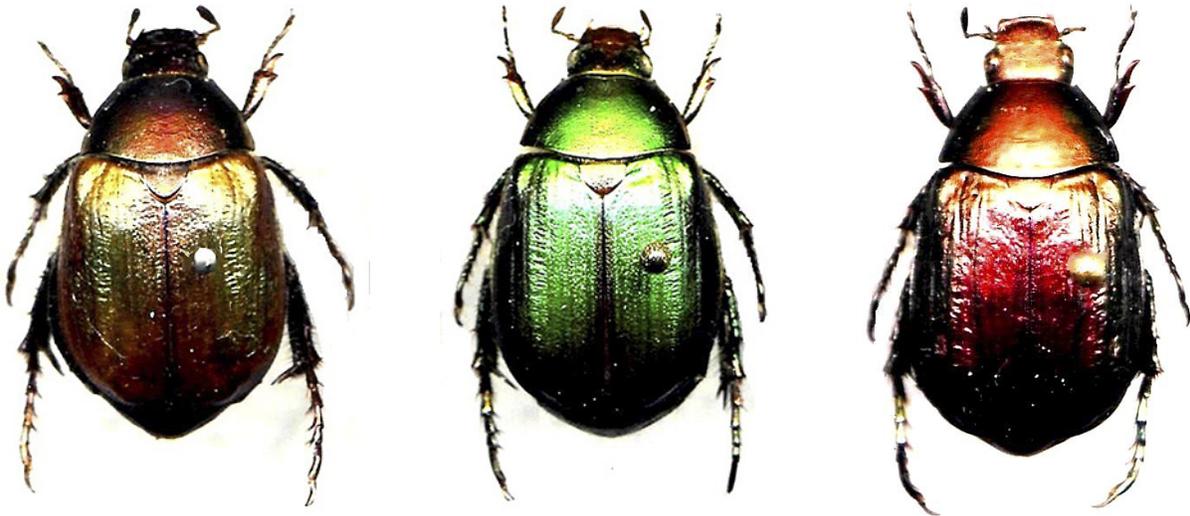
Photo 3: *Amphimallon majalis* Razoum.



Photo 4: *Aegialia arenaria* F.

The subfamily Rutelinae is represented by *Anomala dubia* Scop. (12-15 mm) which is rather common in June and July. I found the specimen depicted in Photo 5 in the dunes near Dunkerque. This species is very variable in color and can also be green (Photo 6). This specimen was collected on the south coast of France. The red form (Photo 7) was collected on the western French coast. Lastly, there is a blue form which is not figured.

Using an old catalog (De Norguet – 1863-1867) about Coleoptera in the North of France, I can read that in my region, other scarab species can be found in the dunes: *Sericotrupes niger* Marsch. (Geotrupidae), *Maladera holosericea* Scop. (Melolonthinae), and some Aphodiinae, but I haven't yet collected them.



Photos 5-7: *Anomala dubia* Scop., gold, green and red forms.

In Past Years - XXII - 1980

by Henry F. Howden

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Once again the Ottawa winter convinced us that a February trip to the tropics was a great idea and would cure us of our “cabin fever”. This time no students were involved, as some members of our department objected to the two or three extra days that the trips often took, cutting into their class time; they were definitely not field people! This time our group was made up of Burt Nesbitt, Bob Anderson, Monty and Grace Wood, Eugene and Isobel Munroe and Anne and me.

We arrived in Costa Rica on the evening of February 15. The next morning we rented two cars and left for the La Selva field station. In 1980 La Selva was very different than it is today; to say the least, it was rather primitive. Near Porto Viejo we parked and transferred to dugout canoes. It was a fairly lengthy trip to the station dock and a steep, slippery climb up the river bank (Photo 1). Once on level ground a sign welcomed us to La Selva (Photo 2), just in case we didn't know!

There were two, two-story main buildings, one for the long-term researchers or staff and another for students and short-term visitors. The quarters for the short-term residents were above the dining hall and kitchen and consisted of a large single,



Photo 1: The river bank at La Selva, the first obstacle encountered during our visit.



Photo 2: The “Welcome” sign at La Selva.

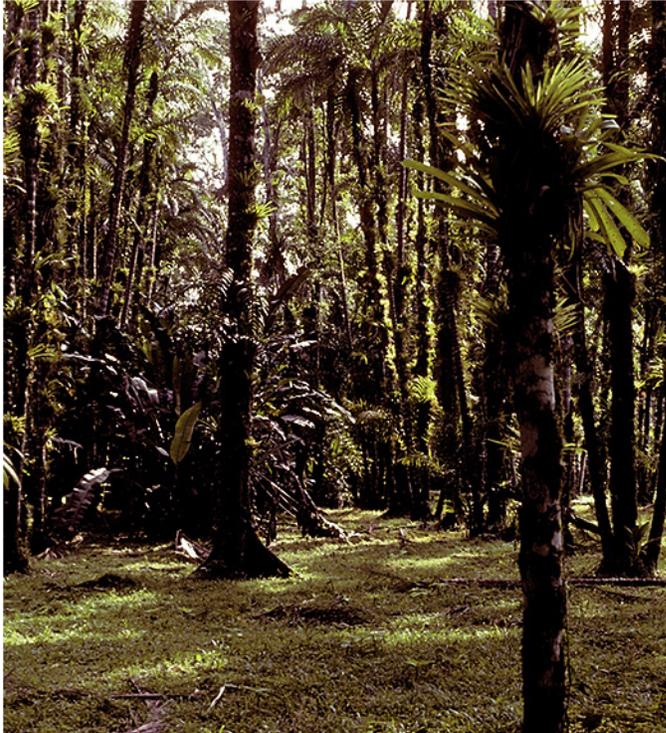


Photo 3: Lowland palms at La Selva, not much diversity here.



Photo 4: Leaving La Selva via the river, an interesting ride.

open room crowded with bunk beds about three feet apart. These consisted of rather insecure looking planks with canvas stretched between the wooden sides, each bed with two sheets and a pillow. Students were occupying all of the lower bunks and many of the upper bunks, so we occupied vacant upper bunks scattered around the room. Anne and I were lucky to find adjacent bunks! Since there was no privacy, dressing and undressing was under a sheet while in the bunk. The contortions needed to do this while under a sheet made an interesting sight every morning and evening; it would have made a good film. In the dorm, things rarely quieted down for long, as some people were working on bats, others on birds and our entomological group, working lights. It was not up to the Hilton's standards!

On our first day, we started to run into problems with the ecological projects of the group already there. Anne was told not to disturb palm flowers, I was told not to set bug lights close to the nearby paths, as they might hurt someone's eyes, and so on. We got the distinct impression that collecting was frowned on, as it might interfere with some project. There were defined paths, some with planks over wet areas. Some of the nearby forest had been disturbed in the past by planting palms (Photo 3).

Despite all of the regulations, we found some unmarked places, set out traps and generally had reasonably good collecting, but the

beetle fauna was not as diverse as we expected. We found that beer was not available on site, and since it was necessary for the survival of some of our group, Bob made the tedious trip to town, getting both beer and tape. The tape was needed to mark the bottles so that others did not partake of our survival medication.

After four days we returned to our cars via the river (Photo 4). Several in our group had some type of upset stomach (tourista ?) which lasted only a day, and fortunately that day was mostly at La Selva. We then drove to the Talamanca Range and found lodging at Georgina's (Photo 5) near Cerro de La Muerte, elevation about 3,000 meters. Georgina's was mainly a bus and truck stop, but it had four rooms on the second floor above their kitchen. Cooking odors wafting up to our rooms often indicated what food was being prepared!

The area had been partly cut-over but many large oaks were still present (Photo 6), as well as alder and a variety of other montane species. Anne collected *Pandeleteius* and other weevils by beating, but scarabs were scarce, and only a single *Cyclocephala* came to light. Nights were cool and often rainy, but that didn't stop the moths from coming to our lights, keeping Eugene happy.

The third night at Georgina's we were told by the staff that there was a chance that "banditos" might be near and that we should be careful. I think we over-reacted to this by



Photo 5: Georgina's, our lodging in the Talamanca range at about 3,000 meters.

blocking the stairs with a mattress and hiding our money in various places - in shoes, pillows, etc. It would have made a great story if something had happened, but it didn't. We were slightly short of sleep the next morning when we left for different locales.

Monty, Grace, Burt and Bob departed to Monteverde and the Pension Quetzal. The season was different from the time we had



Photo 6: Forest near Georgina's; the large trees are oaks.



Photo 7: One of the inhabitants of “Florescia”. Was the butterfly trying to confuse predators?

collected there and Bob collected a new species of *Onthophagus*, plus a fair number of other beetles. I can't report on their activities in any detail, except that Bob told me that the scorpions were still in the Pension in numbers. He told me that, when turning the lights on one night after they had been off for half an hour, he found scorpions on the floor, walls and ceiling of his room. Apparently my extermination program of a year



Photo 8: Early tribal ruins in Guyabo National Park on Volcan Turrialba.

earlier had no long-lasting effect! The group all survived and returned to join us in San Jose when we were due to return to Ottawa.

Eugene, Isobel, Anne and I went to CATIE (the Central American agriculture experiment station) at Turrialba where we again were lodged in a large house overlooking the river gorge. I was interested, not only in any seasonal differences, but in a comparison of the scarabs of the lowland portion of La Selva with those from the mid-elevations represented by the area around Turrialba.

Our black light was run on the porch of our lodging, and later in several other locations, including near the bottom of the gorge. The black light was not very productive, as the nights were cool and the moon more than half full. Dung and fruit traps were the most productive for scarabs, along with beating and general collecting. We collected along the nature trail into the gorge and in a small forested area (Photo 7) on the station grounds called “Florescia”. Both were productive, yielding different species with ceratocanthids and *Hoplia* collected only at Florescia. Aphodiines, *Phyllophaga*, *Anomala*, *Cyclocephala*, *Faula* and a moderate variety of other beetles occurred in both localities. Dung traps produced *Onthophagus*, *Dichotomius*, *Canthidium*, *Uroxys*, *Phanaeus* and several aphodiines. Fruit traps yielded different *Onthophagus* and one species of *Hoplopyga*, a cetonid.

The diversity of the scarab fauna collected at Turrialba was almost twice that collected at La Selva at that time. This difference may have been partly because of the greater diversity of habitats we could sample at Turrialba, and partly because we were somewhat restricted in our collecting at La Selva.

One afternoon we turned tourist and were taken up Volcán Turrialba by one of the station staff to Guyabo National Park. We did some collecting along the way, but not much and nothing new to us turned up. I took a picture of one of the ruins found in the Park (Photo 8) and, since I was carrying my camera, took some pictures of a few insects, unfortunately not beetles (Photo 9). We also stopped on our way back to replenish our rum supply (in case anyone was bitten by anything). Several more days were spent at Turrialba, the last day being occupied by picking up traps and packing.

We met the rest of the group in San Jose and that afternoon Anne and I visited Mary Jane and Bill Eberhard (Photo 10), friends who had assisted us on several trips to Colombia. The next day we returned to Ottawa and cold weather.

There was a sequel to our Costa Rican trip. Some time later Anne received a request to identify palm weevils from La Selva for one of the investigators that had objected to her collecting on palm flowers. I also had a request asking if I



Photo 9: Rear end up, an odd fulgorid mimicking what?

could please list the scarabs from La Selva and compare the species richness to that of Barro Colorado, Panama. I am afraid that my reply was a little abrupt. Five days of collecting did not give a useful data base for making a comparison! Much later I learned that a permanent black light had been set up near the La Selva lab, not for the main purpose of sampling the species richness but to obtain



Photo 10: Mary Jane Eberhard, Bill Eberhard and Anne at the Eberhard's home in San Jose.



Photo 11: Cabins at the Forestry Research Station on Cowichen Lake, Vancouver Island, B.C.

food for bats and other ecological projects. So much for taxonomy!

During the summer we were encouraged to attend ICSEB II (International Congress of Systematic and Evolutionary



Photo 12: Cowichen Lake between showers.

Biology) at the University of British Columbia, Vancouver, where Anne and I were to give papers. Since the meeting started about July 19, we decided it was a good opportunity to spend the month before the meeting collecting on Vancouver Island. Fortunately we were able to arrange lodging in a forestry research station at Cowichen Lake near Mesachie. Our lodging turned out to be a fully furnished cabin (Photo11) with its own kitchen, situated beside the lake.

As can be seen in the lake-side picture (Photo 12) it was often cloudy, and rained frequently - not great for collecting - a temperate rain forest! We found after a few days that the rain was spotty and that the southern edge of the island just west of Victoria had about 17 inches of rain a year. Witty's Lagoon (Photo 13) was in the low rainfall area, and often was sunny when it was raining at the forestry station. It also had a sandy beach with the usual coating of logs that had escaped from the logging rafts. It was interesting to see that these old, somewhat salt encrusted logs were still attractive to some lepturine cerambycids which were taken ovipositing on some of the beached logs.

Neither Anne nor I had great expectations for getting many species in the particular groups that interested us. Rather we hoped to fill in with genera represented mainly in the northwestern part of North America and to collect groups that were largely restricted

to temperate rain forest, some cerambycids and buprestids for example. There were a number of "*Aphodius*" and some lucanids that I hoped to find and Anne thought it worth while to try to verify the record for *Trigonoscuta*, a weevil recorded from Vancouver Island without a distinct locality or recently collected specimens. I also liked to "stamp collect" tiger beetles and there were a number on the island that I lacked. In reality, we spent the month collecting any beetle that was stupid enough to be caught!

Since we were in a forestry camp, there were good stands of conifers nearby (Photo 14). I set out both dung and malt traps (for nitidulids) along the trail in the forest; both were productive. I even dug up several *Odonteus obesus* (LeC.) - (name change by ICZN)- along the forest path.

Since we were in the middle of an area being lumbered, we had to check in each morning with the lumber company headquarters for permission to use the forestry roads. They knew which roads were being used each day by the lumber trucks and which were not. We were told to stay off the "being used roads" and were glad to do so. Meeting a fully loaded truck speeding down a narrow dirt road would not be good for one's health, let alone having to buy the rental company a new car (assuming one was alive to do so)!

When we drove on the lumber roads, I was interested to see



Photo 13: Witty's Lagoon on the southern edge of Vancouver Island.



Photo 14: Forest near our cabin at Cowichen Lake.



Photo 15: Example of clear cutting, cleared several years previously. Not great collecting.

if recently cleared areas (Photo 15) would produce many beetles, as was often the case in the southeastern U.S. I was disappointed; collecting was slow, with only a few common cerambycids on some daisies (Photo 16). Our best collecting was mostly in patches of open mixed hardwood- conifer forest with some flowering shrubs such



Photo 16: Common lepturine cerambycid on daisy, a beetle found even in clear-cut areas.

as the common Ocean Spray, *Holodiscus* sp. (Photo 17). After a week or so of local collecting, including every sandy beach we could find, we decided to go “up Island” to The Pacific Rim National Park. We had collected several species of *Aegialia* on the beaches, but had not found the elusive weevil, *Trigonoscuta*. To get to the park, we drove along the east coast to slightly north of Nanaimo, stopping at several small beaches along the way. The only thing we found of interest were some specimens of the lucanid *Sinodendron* in an old tree stump near the road.

The road to the west coast then took us across the island to Tofino; along the way we went through a small “virgin” stand of Douglas Fir which was endangered, not by pests or logging, but by tourists (overweight ones especially) walking through the stand, compacting the ground around the trees, and thus gradually killing the trees!

Once on the west coast near Tofino, we found a beautiful sandy beach that was many yards wide and miles long (Photo 18). At the northern end we were warned that there was a nudist settlement that did not welcome visitors. From a distance we could see why. The nudists were about as scruffy a lot as one could imagine: overweight, unkempt, probably unwashed and living in drift wood - cardboard huts. I

was not even tempted to take any pictures!

We did little or no collecting since it was a national park and we did not have permits. We enjoyed several hours just walking along the beach and then went to the ranger station to see if we could get permission to collect, having neglected to have the foresight to apply ahead of time. The ranger in charge was very nice and told us politely that we should have gotten a permit - not planning ahead of time to visit the park was no excuse. We replied that it was too bad, the beach near the station looked like a great place (Photo 19) to run a black light. As suspected, the next question was - what the heck is a black light? We explained that it was a florescent light which gave off ultraviolet light that attracted many insects. The idea obviously intrigued the ranger. After some more questions, he asked if we would be willing to show this equipment to the summer student rangers and, if so, he could call it a training session. He even allowed that we could keep a few beetles, if we showed the student how they were handled. There is more than one way to skin a cat, as the expression says.

That evening the black light had an audience of seven including the ranger and, fortunately, attracted a fair number of insects, including a series of *Polyphylla*. Since headlights were used to see insects near the light, we also looked at some of the nearby



Photo 17: Ocean spray, *Holodiscus* sp., one of Vancouver Island's better beetle flowers.



Photo 18: Beach near Tofino in the Pacific Rim National Park, Vancouver Island.



Photo 19: Beach beside ranger station where we ran our black light.



Photo 20: Whistler Mountain, site of the 2010 Winter Olympics. How it has changed!

beach plants. Surprise, we found on some small succulent plants (*Cakile?*) growing on the beach numerous specimens of the weevil *Trigonoscuta!* The evening was a success, the students learned (perhaps) something about insects and we found and kept examples of the beetles. The next day we returned to our cabin at the Research Station and a few days later left for Vancouver and the ICSEB meeting.

The meeting was held on the campus of the University of British Columbia (UBC). It was well organized with a good attendance. We enjoyed ourselves, met lots of people, heard good and not so good papers and, since many of these were published, will not comment further. We did some local collecting, took a train ride to Whistler (Photo 20), which has greatly changed since then, as it is now the site of the 2010 Winter Olympics. We grudgingly returned to Vancouver and flew back to Ottawa.