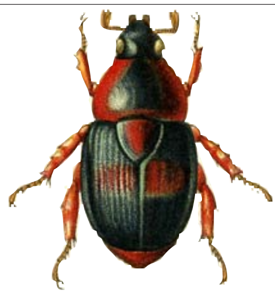

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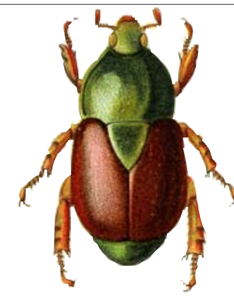

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WITHIN THIS ISSUE

An Annotated List of Some Species of *Chrysina*

by Daniel Curoe

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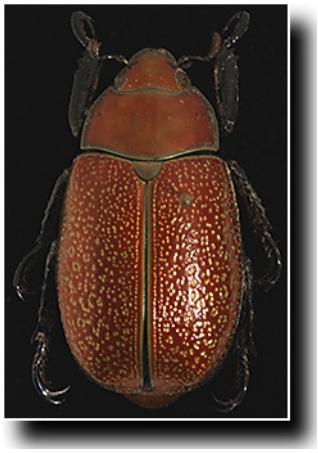
Abstract:

Thanks go to Mayte Ordorika Saavedra for the beetle pictures with black background.

Also, thanks to Scott Mescher who helped me out by photographing a *Chrysina guaymi* that I collected in May 2007.

Daniel may not have a lot to say in the text columns, but the *Chrysina* he has collected speak volumes. So, before you consider yourself to be a great collector, better check out the next few pages...

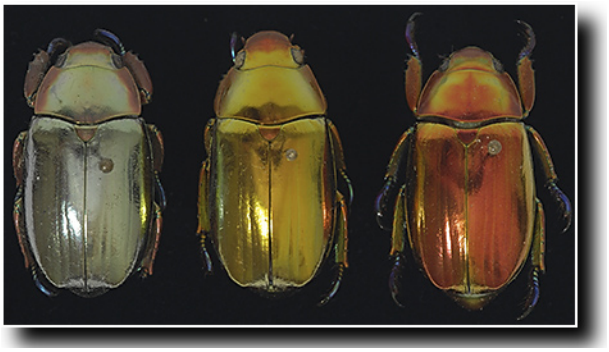
Chrysina costata **(banchard, 1850) Common species from Xicotepec de Juarez, Puebla, México.**



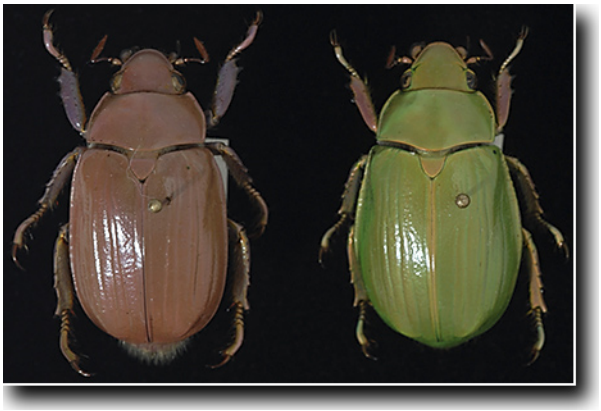
Chrysina cunninghami **(Curoe, 1999). Believed to be Editor Rich's favorite species.**

Chrysina strasseni **(Ohaus, 1924) Foothills near Pico Pijol, Honduras. Apparently this site has been completely razed.**

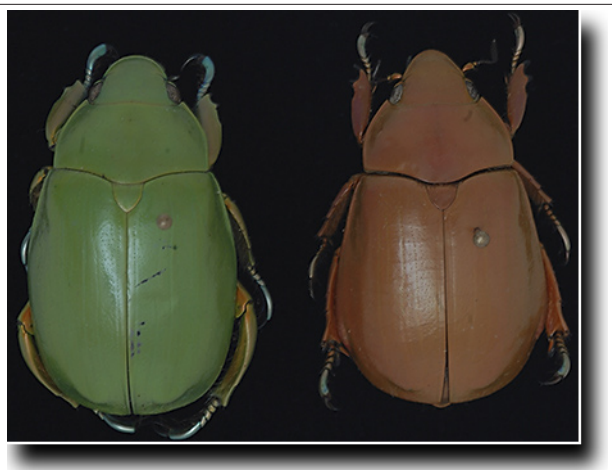
Chrysina **sp nov. One of many new species awaiting description. This one and the closely related *C. pelkhei* live in the Central American Nucleus (S. México and N. Central America), probably the richest area in *Chrysina* species.**



Chrysina chrysargyrea. **Very colorful species from Costa Rica and Panama.**



Chrysina crassimargo **(Rothschild & Jordan, 1894). Cloud forests in Jalisco, México.**



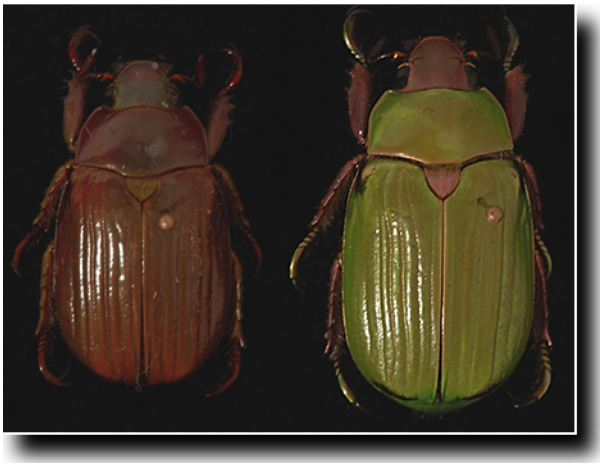
Chrysina karschi **Nonfried, 1891. Cusuco NP. Widespread in pine-oak forests in Honduras.**

Chrysina spectabilis **(Ratcliffe & Jameson 1992) This aptly named species lives in Cusuco NP and a few other localities in the Sierra del Merendon which runs parallel to the Guatemalan border.**

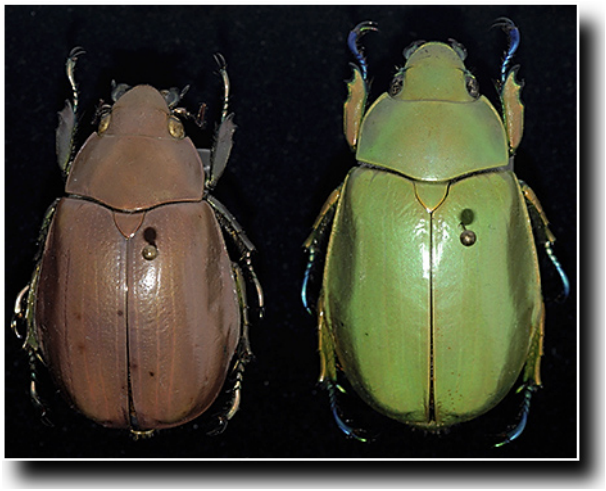
Chrysina quetzalcoatli **(Moron 1990) Commonly found in pine and pine/oak forests from Chiapas to Nicaragua. The Isthmus of Tehuantepec separates this species from the very close *Chrysina adelaida*.**

Chrysina luteomarginata **(Ohaus, 1913) green and pink forms, both from Pico Pijol, Honduras. A widespread species, it ranges from Guatemala to Costa Rica. It is one of the few species that are distributed across the Nicaraguan Depression.**

Chrysina magnistriata **(Moron, 1990). From the windswept cloudforests near the continental divide at La Fortuna, Panama.**

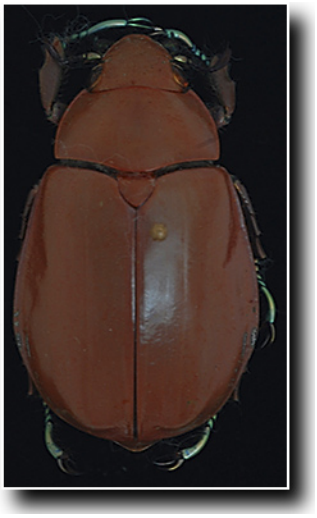


Chrysina purpurata **(Moron 1990) Collecting in the fir forests of Guerrero, where this species lives, can be a dangerous proposition.**



Chrysina aenigmatica (Moron, 1990) This rare species lives in a narrow altitudinal band, in oak forests, in the states of México and Morelos.

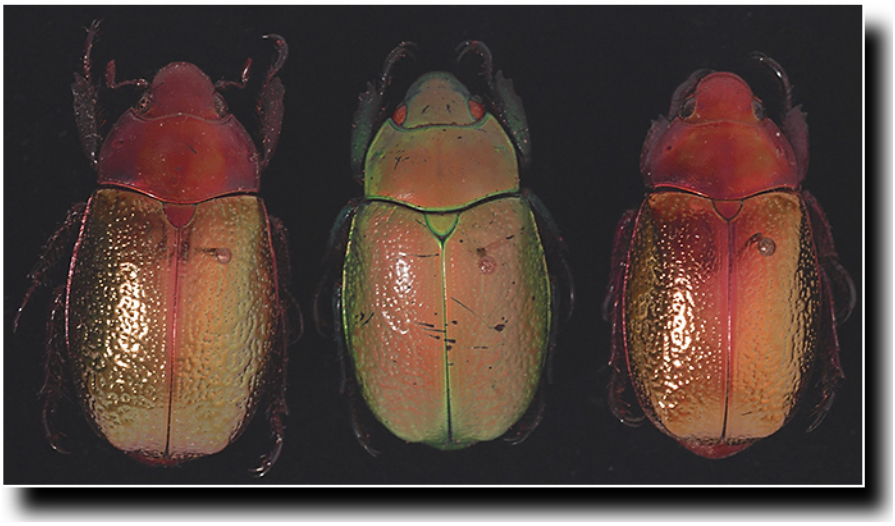
Chrysina pastori (Curoe, 1994) Patchy distribution in western Honduras.



Chrysina modesta (Sturm, 1893) brown form. Ex S. Pokorny collection (Prague).

Chrysina boucardi (Salle, 1878). This large species lives in the cloudforests of eastern Costa Rica and western Panama. Remarkably, there are 5 or 6 distinct color forms. Of these the gold form is surely the most spectacular.

Chrysina boucardi (Salle, 1875) golden form from Panama: Bocas: Cañaza, Sendero Culebra (vic. Boquete) at 1,450 m. At this locality all *C. boucardi* collected have been of the gold form.



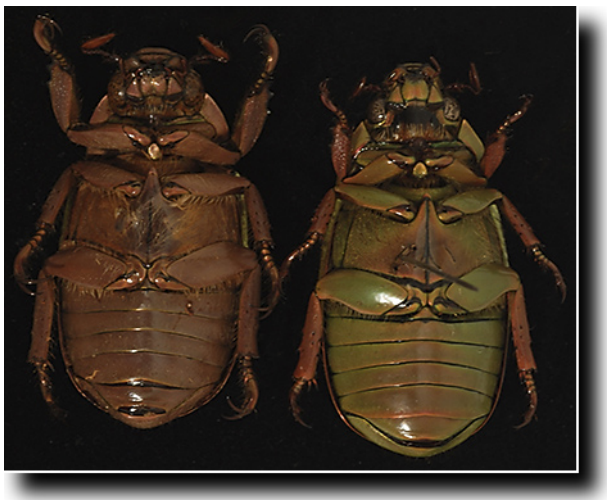
Chrysina optima (H.W. Bates, 1888). Extraordinary pink specimen collected in Chiriqui, Panama.

Chrysina optima (H.W. Bates,1888) A common and highly variable species. Specimens in photo form a silver-gold-orange spectrum. There is also a silver-pink-dark cherry red spectrum. Certain color forms, rare or nonexistant at one locality may be common or even predominant at another.

Chrysina sp. from the Oaxaca-Chiapas border area. This species was formerly known as *Chrysina psittacina*. According to Dave Hawks' research, the name *psittacina* actually corresponds to the species formerly known as *auripes*, from NE Mexico.

Chrysina tapantina (Moron, 1992) Specimen is first record from Panama (Volcan Baru).

Chrysina batesi (Boucard, 1875). Silver (predominant), copper and bronze forms of this variable species.



Chrysina batesi (Boucard, 1875). Ventrally brown (predominant) and green color forms. Costa Rica and Panama. The green form is very likely what was described as *Chrysina ohausi* (Franz, 1928). Unfortunately the holotype is lost and the type locality ("Panama") is vague.

Chrysina batesi (Boucard, 1875). The form with green venter and pygidium has been found at very high elevations (over 2,300 m) in Costa Rica and Panama. Typical habitat for *C. batesi* consists mainly of forests of the huge oak *Quercus costaricensis*.

Chrysina guaymi (Curoe, 2001) This is an apparently very localized species found so far only at the Finca Lerida, a private reserve and coffee plantation on the foothills of Volcan Baru, Panama.

Chrysina guaymi (Curoe, 2001) L, and *Chrysina batesi* (Salle, 1875) R. These 2 species are closely related and quite similar. They can be reliably separated by comparing their clypei (partially silver in *C. guaymi*, brown in *C batesi*), parameres, ventral/pygidial coloration, size and other characters. Both specimens from the Scott Mescher Collection.

In Past Years - IX 1964-69

by Henry F. Howden

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In the mid 1960's a proliferation of bureaucracy occurred at the farm, including the Entomological Institute (CNC). A five or six person "Research Directorate" was inserted between the head of entomology and the Deputy Minister and an administrative assistant was "assigned" to our Director. For several years I had recorded the productivity of the Institute (CNC): average number of pages produced divided by the number of research scientists. I also kept track of the number of administrators as a percentage of the total staff. In the 1960's the percentage of administrators increased about 25% while the number of research staff stayed relatively constant. With the increase in administration, productivity fell about 25%! Part of the change was a program evaluation and I was called upon to explain why we should be interested in México. I will not go into details; I did point out that more and more food and other products were imported from México, that some mountain areas had a moderately harsh winter and since there were many generic similarities between these areas and some parts of western Canada, they were areas to look at, both for forest pests and for possible biological agents for pest control. To my surprise, I was told to organize a group to investigate the mountains of western México to look for parasites of *Neodiprion* sawflies which were causing some problems in Canada at that time. Remembering the lumber company in the mountains of Durango, I asked them if we could use an area west of El Salto. They and other groups all agreed it was a good idea, so ten of us (six from the CNC, three from Forestry plus one cook) in five vehicles, one ten ton truck, one International Scout, and three station wagons, set off for Durango. All our paper work was done; we had the blessings of the Mexican government, collecting permits, and an invitation from the lumber company in Durango. We drove to El Paso and checked with the Mexican Commercial Attaché that everything was in order; it was. The next day we crossed into Mexico at Ciudad Juárez.

Photo 1: The Ag Canada (CNC) expedition to Durango. The first stop in México just south of Ciudad Juárez, Chihuahua.

I expected that we would cross the border without a problem. Previously I had always had to pay a small "bribe" to enter the country. We arrived at the Mexican customs on May 24, 1964, and all of our papers were carefully examined, we then sat around for nearly an hour before we were bluntly asked "Who is going to pay us?". We took up a collection of two dollars a head and were on our way, but not without some loud objections from some who had never been to México.

Later we stopped on the road for a hasty lunch (Photo 1) and then drove on to the city of Chihuahua and spent the night in a motel. To our surprise, we were asked by a local lumber company if we could stop long enough to look at an insect problem at their lumber camp at the Mesa del Huracán in the mountains to the west of the city. Four of us were loaded into a small plane and flown to the Mesa. The plane trip was the interesting part. The pilot did not bother to fly above the mountains, but between them, finally landing on a narrow dirt strip that ended at a small bridge that we taxied over, past some houses, finally reaching the company lodge.

Their problem was partly leaving slash for beetles to breed in and partly a bark beetle that sanitation would only partly control. The next day our return was delayed until some clothes lines were removed from the dirt runway! Our return was uneventful, although it seemed at times that I could reach out of the plane and turn rocks. The next day we went on toward the city of Durango.

Durango was a nice-sized city with several banks, a good supermarket and a good motel. We set up an account at one bank, rented one room for the summer at the motel and got the supermarket to agree to cash checks. The lumber company was advised that we had arrived and several days later we established our permanent camp about ten miles west of El Salto. The site was in an open forest at the edge of a large meadow with a small spring nearby which we used as our water supply. On June 1, while setting up camp, some of us were stopped by two inches of hail; it held us up for several hours and convinced some of our skeptics that it might be rather like parts of British Columbia after all.

Photo2: Camp about 10 miles west of El Salto, Durango.

The lumber company furnished us with enough lumber for flooring for our tents and to build tables.

We had five 8-by-10 foot tents for sleeping, a 10-by-14 work tent for curating and two 10-by-12 tents put together for eating and for card games, etc. We even had a latrine tent. Digging the hole for this proved very productive! About four feet down, the waste burrow of a gopher (*Thomomys unbrinus*) was discovered and both *Onthophagus* and several aphodiines were taken. This fortunate event lead to many more excavations during the summer.

When the camp was finally established (Photo 2) we used a three-thousand watt generator to run lights in the main tent and the work tent, along with several UV lights. The lighted camp (Photo 3) was so well illuminated it was easily seen from the road; the result was that several times truck drivers stopped and asked if we sold beer!

At first the weather was cold and dry, with frost on the nearby meadow in the morning. Then on June 12 there was rain and hail and shortly thereafter scarab collecting at light was great. Evenings were still cool, about 50° F at 10 PM. One evening it was much warmer and foggy and we expected to get swamped with beetles; almost nothing came in, it turned out that a cool drizzle was the norm and were the best nights for beetles. Nothing very noteworthy happened at camp. Our "cook" turned out to be no cook at all. He had "cooked" for a forestry camp the year before, but no one had told us that a nearby store sold frozen dinners and all he had done was to heat them up.

Photo 3: The same camp at night. Were we well lit, or what?

The elevation of the camp, about 8,000+ feet, didn't help and we had some woefully under cooked meals. Fortunately, not all of us stayed in camp all the time. Twice a week several of us went back to Durango for supplies and a good meal, sleeping in our rented room, enjoying a hot shower, and leaving full boxes of mounted insects (in a drier environment). One time the few that went came back the next day unhappy; the motel was full of poultry for an important cock fight the next day.

Photo 4: A stream near our camp.

Photo 5: "Forest" just up coast from Mazatlán, Sinaloa.

We kept track of the weather on the coast near Mazatlán by asking truck drivers if it had rained, as we wanted to collect the first week after the rains started there. About once a week four of us drove down to Mazatlán to thaw out. It was wonderful to go from a high temperature of 70° F and drizzle to 90° F and sun and stay in a good motel that we found on the north-west side of town near the beach. While we had good collecting at camp, the coast was very dry, with few insects and leafless vegetation.

Photo 6: John Chemsak in "forest" near Mazatlán.

While we waited for the coastal rains, we had some visitors drop by; among them was Paul Spangler and family chasing water beetles. Although there was our spring and a few other seeps near by, there was not enough to keep the Spanglers busy for long. Just after they left, the coastal rains started in earnest on July 6. Within a week the coastal vegetation started to green up (Photo 5) and collecting went from poor to great.

Northwest of town, near a walled estate where the movie *Night of the Iguana* was filmed, there was a large patch of brush with several dirt roads cut through it leading to a small quarry. There were small trees in the brush that came into flower and proved very productive, both for scarabs and cerambycids. *Apeltastes elongata* H. and other trichiines were taken there on the flowers, and dung traps did equally well. Light collecting was also very productive.

Shortly after the coastal rains started we were joined by John Chemsak (Photo 6) and Jerry Powell, both from the University of California, Berkeley. John, collecting in the scrub, found it one of the richest spots for cerambycids he had ever seen, but it was HOT in the afternoons. One day, after John had had a late night with friends, Jerry and I heard a noise about noon and, on investigation, found John passed out from the heat; thus ended our collecting for the day. John rapidly recovered in the cooler motel, no harm done.

On one of our trips to Mazatlán later in the season, a storm came up during the evening. I had hung my pants containing my wallet on the handle of the outside door leading to our second floor balcony. The door handle was one that protruded sideways, not a knob. The wind reached hurricane force and blew all the motel doors open and took off part of the roof. I was lucky the protruding knob faced into the room, my pants were parallel to the floor and the only thing that kept them from blowing away was the door handle! It was a wild night and the next day we were glad to get back to camp which had escaped the storm entirely.

During our stay in the mountains we mounted many boxes of insects, particularly Diptera, Lepidoptera and Hymenoptera. Discards often wound up on the floor of the work tent. After a short time we did not have to worry about a clean up; a species of *Junco* found out about the new food source and came into the tent while we worked, even foraging between our feet! We had to make sure that insects we wanted were kept in closed boxes.

One thing that we had come after, *Neodiprion* sawflies, were found in some numbers by our three forest entomologists, and an estimated 5 to 8 thousand live pupae were taken, put in insulated milk cans ready for transport back to Ottawa.

The evening before we broke camp, we had, among other food items, some poorly-cooked green beans for dinner. As was his custom, our "cook" helped himself first and sat down to wolf down his food. One of his victims (the rest of us) had gotten some green jalapeño peppers and cut some up to the size of the beans. One of us distracted the cook for a moment while the peppers were added to his pile of beans. These were quickly consumed with the desired result - lots of yelling and quantities of water consumed. It was a small, petty revenge for what we had put up with from the "cook" for most of the trip!

The next day we left and headed back toward Ottawa in two groups, one with the truck now loaded with our sawfly pupae going back through El Paso, while several of us took the slightly longer route up the coast to Nogales, collecting along the way.

We arrived safely, to find that bureaucracy had struck again. Several years before, the biological control unit with its rearing facilities, had been separated from the Ottawa group and moved to Belleville, Ontario, with a different director and a separate administration. The "Director" claimed that he didn't know of our *Neodiprion* project and hence had no local culture of sawflies on hand. I still have my doubts, and suspect other motives. To make a long story short, it turned out that we had five species of sawflies, all new species and, of these, 90% were parasitized; most of the parasites were also new. All of these died before a native colony could be started, so one of the main objectives of the trip was never achieved. Other pests became more important, so nothing

more was done to see if any of the parasites would have been useful for a control program in Canada. However, the CNC did get a wonderful collection of insects from Durango!

The following year, 1965, was unusual as I did not spend much time in the field. On March 14th George Holland (fleas), Director, CNC, and I left to drive to Texas to pick up the Larry Bottimer collection of bruchids. We decided that we should take advantage of the reason for the trip to extend it to include some collecting. Along the way we stopped briefly in Ann Arbor to see Henry Townes and in Urbana to see Milt Sanderson. We then drove south, stopping at a motel on the Louisiana-Texas border for the evening.

On the way, George and I had been discussing accents, mine, his (from British Columbia), and some of the people we met going south. The waitress in the motel restaurant was an outstanding example of the local linguistics. Neither George nor I could understand her. We both had tea and she asked if we wanted sugar. It took three tries before we realized what she was asking! Trying to imitate her accent kept us busy for hours the next day.

On March 19th we arrived at the Welder Wildlife Refuge and in the evening set out some small mammal traps in the Hackberry Mott near the river in the hope of getting fleas for George. It was too cold, about 35º F, to try black lighting.

The next day was cool, with almost no insect activity, so we dug up pack rat nests and gopher burrows. Both were productive for scarabs and less so for fleas. Pack rat nests yielded *Onthophagus*, *Euphoria* and some phileurines; in the discard burrows of the gophers (side tunnels with feces and some vegetation) we took mainly aphodiines. Years later, much of the cactus had been crowded out by other vegetation and pack rats were rare.

By March 22nd it warmed up somewhat and I took *Onthophagus*, *Ataenius* and *Phanaeus difformis* LeC. under cow dung, the *P. difformis* only in one sandy area. Black lighting yielded a few cerambycids, but no scarabs. On March 24 we left for Kerrville to meet with Larry Bottimer and pick up his collection. We spent several days packing the collection, then drove back to snowy Ottawa, arriving March 30.

On July 3rd we left on a rare family vacation to visit Anne's family in Lutherville, Maryland, and some of my relatives in Savannah, Georgia. The trip, which lasted until July 27, was mostly visiting but included about five days of collecting on Hilton Head Island, South Carolina. Normally, at that time of year, collecting yielded few insects in the south east, but we found that if we stayed in the cool-spray zone within a quarter mile of the ocean that there was still some activity. *Eucanthus subtropicus* H. came to black light at the forest edge and we found several specimens of the rare *Bolbocerosoma hamatum* Brown digging in a wet, open, sandy area at the edge of a tidal

salt marsh - a most unusual habitat for a geotrupine.

Field work in 1965 was mostly confined to islands. On June 5, four of us left for Sable Island about 100 miles east of Halifax, Nova Scotia. We were flown out by the Canadian Navy in new (at that time) Sea King helicopters (some are still in use in 2008!). We were only on the island until June 13 and during that time it was often windy and rainy. Collecting was limited to sweeping the low vegetation (no trees except a ground juniper), sifting sand and litter and by Malaise and black light traps. Only seven species of scarabs were found, three of which are native species: *Aegialia sissipes* LeC. (possibly the same as an European species), *Serica tristis* LeC and *Phyllophaga drakii* (Kby.) and four European imports: 2 *Onthophagus*, 1 *Aphodius* and 1 *Aegialia*. Not rich scarab collecting, but an interesting place for other things.

On June 30, 1966, the Beckers (Ed, his wife Martha, and 5 daughters) and the Howdens (Henry, wife Anne, and 3 daughters) flew to Jamaica. Plane loads of tourists regularly flew between Canada and Jamaica and, coming back, the planes often brought a number of extra passengers in the form of various live insects. We were sent to do a quick survey of the Jamaican fauna simply to learn what was there and if any of the insects were likely to become serious pests in eastern Canada or the U. S. Pests of stored products we already knew about.

Eastern Airlines carried us to Miami, then BWIA took over. When we arrived, we found that the large tubular piece of luggage containing our net handles and detailed maps of the island were lost. That was a major problem for the entire two months spent in Jamaica. When we returned to Ottawa, we sent Eastern Airlines a bill for $200; a week later our "lost" luggage appeared! We made do with local maps and home made net handles, but lots of time had been lost with airport bureaucracy with no results.

Our rental car also presented a problem to start with. Our first night we stayed in a Kingston motel with the understanding that the rental car would be delivered overnight and we would then have the use of it in the morning. The car was outside our door in the morning with two flat tires! Fortunately a service station just across the road fixed the flats and we left later that morning for the Institute of Jamaica guest house at Hardwar Gap (about 3,000 feet elevation). On the way we had another flat tire. In the first week we had eight more "flats" and finally told the car company to either put new tires on the car or we would go elsewhere. We got our new tires and had no more trouble with the tires.

The guest house was adequate but was partly positioned over a steep slope and held up by rather spindly native tree trunks that looked anything but secure. Fortunately the trunks held up until 3 or 4 years later when the guest house had to be abandoned. The house came equipped with a caretaker, a very

elderly lady who governed the neighborhood; no one could try to sell us fruit or anything else without first going to her. We suspected a kick-back was necessary, but never found out. While the house was furnished with new beds, no one had bothered to fix the windows, and the fog came drifting into the dining room most evenings. Rats ran wild over the entire island, one of the few places where they had reverted to living in the forest, away from people, but they also were pests in houses. We had to keep a broom in the dining room to swat any rats that got too bold.

The location was ideal for collecting. There was native forest around the guest house, and near the "gap" there were freshly-felled trees, cut to allow a power line to run over the ridge. On the cut trees were literally dozens of species of weevils and cerambycids. On several evenings we had to stop when we ran out of killing bottles! A large, uncommon species of *Callichroma* filled several bottles on one occasion.

One of the most interesting "finds" of the trip was at our black light run on the veranda of the guest house. On foggy, misty nights a large *Strategus*-like scarab often appeared, one or two per night. Since they seemed rather common and were large enough to use up some of our limited space, I only collected about 20 specimens. Males were rare, so these were mostly kept. We assumed that if they came to a light at the guest house, others would have collected them. How wrong one can be! On returning to Ottawa we found our large "common" scarab was *Licnostrategus endymion* (Olivier) described in 1789 without a definite locality, which remained unknown until we collected it almost two hundred years later! Other collectors visited the area in subsequent years, but to my knowledge, never found the species in numbers again.

Other scarabs were represented, but few were common and collecting in general was slow compared to a similar area in México. One weekend Ed and I went up to the summit of the Blue Mountains with a guide, leaving the families behind. There was a forestry cabin at the summit and we were assured that there were two beds and that we were welcome to stay there. After a long hike we arrived at the "cabin" to find it sans door and the beds consisted of frames and wire springs, nothing else was left in the cabin. Fortunately we had some food that could be eaten as is. Vegetation was dwarf trees, moss and some herbs. It was cold, windy and most of our collecting was under the moss or in dead vegetation. We did get some beetles, but not in families that interested us. That night was one of the more uncomfortable nights I can remember. Ed and I put our beating sheets on top of the springs, our field packs were used as pillows and we tried to sleep with all our clothes on, hoping to stay warm. Not only was that futile, but night time was the time for the rats to play. They were all around us in the cabin, fighting or playing, dragging bits of paper around and generally doing everything that might keep

us awake! The next morning we did a little more collecting and then headed down the mountain to a warmer clime and hot food. I am sure the rats missed us, but it wasn't reciprocated.

Toward the end of our stay we moved to Duncans at the edge of the "Cockpit" country; a much drier lowland area. Collecting was still good for weevils and cerambycids, but rather slow for scarabs. The main difference was that the high elevations had a much greater number of endemics, while the lowland species often were found on other islands. The lowland species were the stowaways on the tourist airplanes and were therefore more useful for identifying the insect immigrants to Canada. Before we left to return to Canada we found out that many of the dirt roads in the mountains that we had traveled on were marked as "uninsured", meaning that if we had hit anything while on them our insurance was invalid. It was lucky that we did not find out until the end of the trip, otherwise our collecting might have been far less productive!

In 1967 three months, February through April, were spent at the Museum of Comparative Zoology (MCZ) as a visiting Agassiz lecturer, sponsored by Phil Darlington. I worked on various papers and lectures, very much enjoyed meeting the staff and students, learned that asking a professor if he was working on a book, that the joke was "which one?".

I also learned about vitamin C. After a bout with the flu, I hacked and coughed for several weeks; during that time a bottle of vitamin "C" appeared on my desk with the note "For our sake take some. (signed) The grad students". We all survived and I returned to Ottawa the end of April, thankful for the chance to work at the MCZ.

In late June five of us from the CNC left Halifax and flew to Sable Island via an old Canso amphibious aircraft owned by Mobile Gas. The plane would go backwards if it had headwinds of more than 80 miles per hour; it had been used as a submarine spotter during World War II. The plane was loaded with drill bits and our food and supplies. We sat on top of the bits - not the usual plane ride.

After we arrived we set up in the same quonset hut that we had stayed in two years before. Collecting did not differ much either, mostly sweeping, and crawling around on hands and knees looking under litter. I did turn up one different scarab new to my list, an *Aegialia*, but otherwise any different species of beetle belonged to other families. All told, 125 species of Coleoptera were recorded and one new, endemic species found - a chrysomelid. This was subsequently described by W. J. Brown, one of the members of our group.

The main excitement came when we realized that we were running out of food; we had not counted on the capacity of one of our crew. The west end lighthouse keepers, a Mr. & Mrs. Bell, came to our rescue with a freezer full of bread and 50 pounds of cheese. Lots of grilled cheeses before we left. Leaving was not easy, fog kept preventing the plane from landing and we finally left in the late afternoon a day or so later than we had expected to leave.

We then went on to Prince Edward Island (PEI) and spent several days collecting in the dunes behind some of their beaches, collecting material to compare with that of Sable Island. We returned to Ottawa on July 24. A brief summary of the history of Sable Island, and a list of the groups of vertebrates and invertebrates we had investigated were published by the National Museum of Natural Science (now The Canadian Museum of Nature) as *Publications in Zoology*, No. 4, 1970; 45pp.

On June 28, 1968 the Howden family and the Jack Martin family (wife, son and daughter) left Ottawa in two cars to collect in Utah and places between. Our first collecting stop was 5 mi. N.W. McLeod, North Dakota. We set up our camp (two tents for each family) in a sandy, grassland area and toward evening did some evening (dusk) sweeping; something that Bill (beetle) Brown of the CNC, not Bill (ant) Brown of Cornell, had found productive on a still, warm day. This produced four species of Aphodiini and numerous other small beetles.

The next several days we generally collected and dug gopher burrows; nothing too exciting, but we did get a series of an aphodiine in the burrows. We then moved on to our next site south of Hot Springs, South Dakota, at the Angostura Dam camp ground. Night collecting was good with two species of *Glaresis*, *Ochodaeus*. *Polyphylla*, *Diplotaxis*, etc., coming to light and *Amblycheila* found on some near-by paths along with a prairie rattlesnake! We also tried digging prairie dog burrows with poor results and decided to leave that endeavor to Robert Gordon!

As we drove through Colorado, we collected in the evenings at different campgrounds with mixed results, the ground becoming dryer as we moved west. On July 16 we arrived at our main destination, Hanksville, Utah, and the nearby Henry Mountains (unfortunately not named after me). Anne pointed out that the nearby river was named the Dirty Devil, so no more was said on the subject.

We set up camp in the mountains at the Lonesome Beaver campground at about 7,500 feet. The area was OK with tables, fireplaces with grills, trash cans, and an outhouse, but with a miserable rocky road in and up the mountain. During the week we were the only campers. In the area there were *Populus*, some oak, pine, juniper and spruce; and the entire area was badly in need of rain. We set out various types

of traps: snap traps used by Jack for mice, pit fall traps for both of us, which we baited with dung, carrion or malt (for *Thalycra* - nitidulids). Lots of mice with fleas, but only common scarabs, mostly common aphodiines. General collecting yielded mostly Cerambycidae on flowers and Buprestidae. Light trapping was slow as it was cool at 7,500 feet, mostly *Diplotaxis* and one *Polyphylla*. It stayed dry until July 22 when there were light showers. Collecting picked up gradually as the showers continued, different *Diplotaxis*, *Serica*, and a fair number of other beetles.

Mice around camp got to be a problem, particularly when one got into Anne's hair when she was asleep. That resulted in my setting traps at each corner of our tent, which resulted in my making nearly continuous rounds, the trap on the far side of the tent would be sprung before I had finished setting those on the other side. On the first night I caught over 20 mice! These were checked for fleas and then deposited in the camp garbage can. That weekend they were found by a day visitor (about 12 years old) from Hanksville. The resulting uproar taught us to avoid depositing the mice in the garbage can after that.

It continued cool and rainy until we decided we needed to move down to the desert below the mountain. The day we decided to move, August 1, it started to rain hard. We actually had to dig the up-hill side of the tents out of the mud before we could pack them. Our two cars just made it down the hill before the road was washed out.

A new camp was set up at Fairview Ranch on the flats near some small sand dunes with a sparse, dwarf oak vegetation. Several nights latter we had one good night's collecting. On the light sheet a tiger beetle was taken with an odd scarab in its mandibles, this turned out to be a new genus, new species, subsequently named *Annegialia ataeniformis* H.; which is now known from Nevada and Southern California as well as Utah. Unfortunately, it stayed cool and rainy, and, except for a spotted skunk getting into our tents and getting out with no harm done, collecting continued to be poor.

So by August 12 we headed for home, hoping to collect along the way. It continued cold and rainy and in the south-western corner of Colorado it dumped two inches of hail and snow on us overnight! So back to Ottawa, for the first time returning early from a collecting trip.

In September, 1968, I exchanged one type of bureaucracy for another by moving to Carleton University as a Professor of Zoology with Anne also hired as a Research Associate. In addition, I had a halftime secretary included with my position, along with some research support. I spent the winter teaching and writing a grant proposal to our National Research Council which fortunately was funded.

In late April, 1969, after classes were over (I was always done by the end of April, starting classes in early September), I left with several others from the CNC in the new Agriculture camper for Chiapas, Mexico. We drove down via Lake Catemaco, Veracruz. There I was horrified to see that the lovely tropical forest on the east slope that had been there in 1959 was rapidly being cleared and converted into corn fields. No more howler monkeys and fewer beetles, etc., but still good collecting in places.

On May 2 we drove on to San Cristobal de las Casas, Chiapas, where we stayed at Na-Bolom, the house of Trudie Blom, a well known local character, communist, and supporter of the Lacandon Indians. Outside of town, there was still open forest, mostly pines with scattered oaks, and grazing for horses and cattle. Digging under the dung of the various animals yielded numerous scarabs including *Copris* and *Geotrupes*. We had no problems with the locals and collecting turned up many new and interesting species. The camper was used by two or three of us at a time to visit localities where one needed to camp, we also had two station wagons for those who collected near town.

While in town we were treated to many locally made sky rockets, which were set off skyward for birthdays, etc., and ended with loud bangs. Some of these did not work as intended and landed on the tile roofs before going off and often blowing off some of the tiles. As one might guess, this occasionally caused some arguments!

On May 20 three of us left to go back to Lake Catemaco via the city of Oaxaca and from there to Route 175 down to the east coast. At that time much of Route 175 was dirt and rough and, if one wanted to stop along the way, a camper was needed. At about km 80 on Route 175 there was a large meadow with both cows and horses and under their dung I took a new species of *Geotrupes*. A short time later, when the road started down the escarpment, it became a poor, rather narrow, dirt road - descending through seemingly untouched forest. At km 140 at about 4,000 feet, we stopped and camped for the evening. Collecting wasn't fast, but the species taken near the road and at light were very good, including a new *Onthophagus*.

The next morning, after changing a flat tire, we drove on, after several stops arriving at Lake Catemaco just after midnight. The next night we collected on the east side of the lake in a newly cut area and filled most of our jars with cerambycids from the fresh cut wood and scarabs at our light; great night!

On May 26 we headed back toward San Cristobal, it was then that the rough roads we had been on caught up with us! The days of swaying and bumps sheared the bolts holding the camper to the bed

of the pick-up; the highway speed and resulting air flow caused the front end of the camper to lift up, putting the weight onto the rear of the pick-up and lifting the front end up. The result was no steering and, although we slowed down, we still wound up in the ditch with the camper sliding off and putting a foot long gouge in the road (about ½ inch deep). Although the inside of the camper was a jumble of boxes and equipment, there was little major damage.

One of us went back to the nearest town to get help while two of us stayed with the camper. A short time later a truck full of young Mexican men stopped and offered help. It turned out that they were with a missionary group. They used a power saw to cut logs and shortly, with the aid of the logs and a jack, had the camper lifted, the pick-up out of the ditch, and were easing the camper back onto the bed of the pick-up when the police arrived with a tow-truck and a large chain. They were unhappy that they hadn't gotten the chance to pull the camper off the road, but they still wanted to arrest us for damaging the road. To enforce this, they had left our third member back at the police station, so, since we were now mobile, we all went back to the station, including the Mexicans that had helped us. There was then a classic argument, which was finally settled with the help of the Mexican helpers pointing out that we were Canadians, some with diplomatic passports, and that no harm was done to anyone. We still had to pay a fine of $150 U. S. for damaging the road before they would lets us go! We then drove slowly for two days back to San Cristobal. Fortunately, none of our collections were damaged nor much else for that matter; we did have to fix some outside damage to the camper and re-affix it to the pick-up. We also learned not to ask the police for help!

After our return to San Cristobal, collecting was great from there to the Guatemalan border, particularly so on various flowers for Trichiinae. Our group was due to change in mid-June, with Jack Martin and I driving back to Ottawa in one of the two station wagons, leaving the camper and the other station wagon. This caused some bureaucratic problems with our Mexican car permits which had the name of the driver attached. To change drivers we needed to get new permits and to do this we had to leave México. Guatemala was close enough but, at that time, could present other problems. We solved this, with the help of a few dollars, by leaving México and turning around before actually entering Guatemala to enter México once more with new permits.

After that, Jack and I packed to leave. A few days before, we both had come down with the "tourista" trots. I took a dose of pills containing sulfa, Jack said no thanks to the pills. When we got back to Ottawa, I was OK but Jack was still sick, so he went to a doctor and was told he had amoebic dysentery. Two weeks in Montreal on sulfa drugs cured him!

After a few weeks in Ottawa to catch up on mail, etc., Anne and I with our three children left for Puerto Rico,

arriving July 1. A friend there had made arrangements for us to stay in the forestry hut in the rain forest near the top of El Yunque, but he also had warned us that it was no more than a cement tent. He was right; the one table had only three legs, the remaining corner had to be propped up with old paint cans, some of which were also used as seats. We had sleeping bags and air mattresses for the children and bedding for two cots, that was about it. There was electricity sometimes, but often we had to use our head lights or a Coleman lantern. There was a bathroom with a tub, but water had to be heated on the kitchen stove, which worked when we had power. Before using the bath we often had to chase the tree frogs (know locally as "cro-kees") out; they seemed to like to sing in the room, much like blowing a car horn in a tunnel! The toilet usually had to be flushed by using a bucket of rain water, fortunately there was lots of rain!

General collecting was usually good in the mornings and often in the afternoons, but rain usually stopped night collecting. A flight intercept trap beside our cabin yielded several good scarabs, including *Canthonella*, but nothing really new.

One night we were sitting at the table after the children had gone to bed, when I saw something come under the front door. My first thought was "there are no snakes in Puerto Rico", then I realized that it was one of the largest centipedes I had ever seen. I grabbed an empty pickle jar, filled it with 70% alcohol, got my 12 inch forceps, caught the centipede and stuffed it in the jar. We were glad that the children hadn't seen all this, or none would have wanted to sleep on the floor again. The next morning, when the children were outside, I decided to measure the animal, just to find out how big it was. I opened the jar, which was full to the top with alcohol, and started to pull the centipede out; this was unnecessary. It was very much alive and came rushing out of the jar. The forceps were again needed to stuff it back, and it remained there until we got back to Ottawa. It never was measured, but I later saw even larger ones in Trinidad.

After two weeks at El Yunque we moved to the center of the island and to dryer areas. There melolonthid collecting was good, as was general collecting.

On August 1st we left Puerto Rico and flew to Trinidad, settling into a rented house at Tunapuna, near the University on the north side of the island. We were on a hilltop with scattered houses nearby, and adjacent, small wooded areas. On the outside of the house under a large overhang was a ping pong table; this we covered with a sheet for our black-light. It turned out to be very productive, attracting Bolboceratini and other scarabs in numbers.

We also went to several nearby localities, one being Maracas Bay. Just before reaching the bay there was a wooded area that had

one tree with a fermenting sap flow; we had been told about it by a local entomologist who had collected off of it the year before. It was still productive and yielded *Inca*, *Cotinis*, cerambycids and elaterids almost every time we visited the area. A year later we heard that the patch of forest had been cut; such is progress.

Another good area was a large radio building on the top of the front range at about 2,700 feet north of Arima on the Blanchisseuse Road, the area called Morne Bleu. The building had fluorescent lights on all sides under an overhang and with windowless white walls, with a paved area around the building. We would drive up in the early morning and take until noon to pick up all the beetles that interested us. These included *Neoathyreus*, *Dynastes*, *Cyclocephala* and many others.

Just below the station on a path down the hill there was a downed tree and we set up a Malaise trap beside it. A quart jar was filled to the brim every third day and many hours were spent sorting out the beetles we wanted. Sometime later there was a fence around the area with guards and much of the nearby forest had been cleared; progress again! There were other good areas, but none to match Morne Blue.

We did spend several days at the Beebe Research Station; (Simla) near Arima. The station was interesting in itself, with drinks served before dinner with bats flying in the rafters, a linen cloth on the dinner table with ants in the sugar, very cold water showers and mosquito netting around the beds; a contrast between comfort and camping. When it wasn't raining, trapping with fruit, dung or carrion was great in many places, yielding a number of species of *Onthophagus* and other scarabaeines. At the end of August we reluctantly returned to Ottawa, where we spent the winter sorting beetles and teaching at Carleton.

Literature Announcement

Rumors are true and another major section of North American scarabaeoids have been revised. After several decades of work by Robert Gordon, with a bit of recent assistance from Paul Skelley, we are proud to announce that the following is now available!

Gordon, R. D., and P. E. Skelley. 2007. A monograph of the Aphodiini inhabiting the United States and Canada (Coleoptera: Scarabaeidae: Aphodiinae). *Memoirs of the American Entomological Institute* 79: 580 p.

It may be purchased from the American Entomological Institute ($150 + shipping), for details go to , Publications, Ordering.

The book includes a review of all Aphodiini occurring in the U.S. and Canada. The antiquated BROAD concept of *Aphodius* has been addressed with the fauna being more appropriately arranged into numerous new genera for endemic species and proper placement of other species in more widespread genera. The fauna now contains 54 genera and over 250 species.

As you groan, realize that for the first time since Horn (1887), information on the entire fauna is available in one source. This work makes tremendous progress in understanding our the fauna and how it fits worldwide by finally organizing our fauna into more presumed natural groups, instead of haphazardly placing them in unrelated Old World genera. Thus, this book sets the stage for additional work on all fronts by: proposing generic and species relationships that can be tested, defining many smaller groups that can be subjects of doctoral theses, discussing biologies that will aid us who seek trophy specimens, bringing the taxonomy and nomenclature to a level equivalent with the rest of the world's fauna for more reliable comparisons, etc.

This work includes keys to all taxa and presents over 1,080 images (habitus, genitalic, epipharyx and key structures) to aid in identifying and understanding the tribe. Introductory sections include historical, morphological and terminological comments on the Aphodiini, as well as sections on general biology and ways to collect them.

One early review commented that it was simply an "old fashioned faunal study," not an up-to-date revision. They were partially correct, as no phylogenetic analyses is presented (although a short discussion why is provided). However, given the previous state of knowledge on the group no analysis (molecular or otherwise) could be attempted until such an "old fashioned" work was completed and the foundation created. The authors feel this is such a foundation.

Paul Skelley

For those of you eager to see what this monumental tome looks like, we scanned its cover. Once again, you ask, and *Scarabs* delivers!