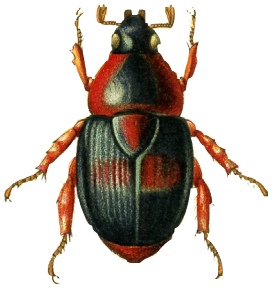

SCARABS

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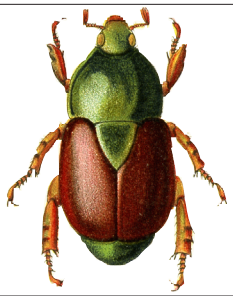

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South India – Deep in Lucanidae Country

by Benjamin Harink

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This is an article about my experiences of observing some Lucanidae species in South India. I had the opportunity to do an internship In Bangalore in 2006/07, and after finishing my MBA, there was an opportunity to live and work in Bangalore. In total, we stayed for 3 ½ years, during which I used some of my weekend to search for scarab beetles, but especially Lucanidae, a group I am very much interested in. Bangalore is a large city of 8 million people, and as such there is not much undisturbed nature left in the vicinity. In fact one has to drive for hours to get into good habitat if looking for Lucanidae. That said, because there are a lot of old trees in the city and parks, there are a surprising amount of beetle species still in the city.

I am writing this article because I wanted to share my experiences with Lucanidae in their natural habitat. Know about the habitat and you know how to succeed in breeding. I am going to write about encounters with *Odontolabis burmeisteri*, *Prosopocoilus giraffa nilgiriensis*, *Odontolabis delesserti*, *Hexarthrius davisoni*, *Prosopocoilus speciosus* and *Dorcus rugosus*.

Whenever I got some free time, I was going out to the nature to observe insects. India is a very difficult country, collection is illegal and there are hefty fines. That is why I was only photographing and

Benjamin in Monteverde, Costa Rica.

Fig. 1: Land leeches even managed to bite through socks.

Fig. 2: All very green in Mudigere during the Monsoon. Lots of dead wood is still left making it a good spot for scarabs.

Fig. 3: The reality of Lucanidae hunting is sadly different from the illusion of beer drinking under lights and waiting for them to find you.

observing. I am sure we can learn from the data assembled in nature, because usually there is no data for species when we get them. For example, South India as locality can be very cold to extremely hot climate. South Indian Lucanidae generally appear during the monsoon, which is from April until August. Finding them is difficult, because the remaining forest is still very wild and can be dangerous: There are leeches (for a graphic image, refer to Fig. 1); there are poisonous snakes, leopards, tigers, bears, Indian bison and elephants, which can kill you if you are not careful!

I am going to write about two locations, one is mid- elevation, the other is high-elevation.

Area 1: Chickmagalur – district. Around 1,000 meters above sea-level. Average rainfall: 1,925 mm annually. Temperatures are 32-35 degree Celsius in summer and 17-20 degree Celsius in winter. Lucanidae season is from May to September.

30% of the district is still covered with forest (Fig. 2). There are no important industries; the cornerstone of the income comes from coffee. Chickmagalur district was the first place where coffee was grown in India. Coffee plants usually are shaded by the original forest cover and thus there are still many insect species available, whereas tea plantations are usually dead. Lucanidae are somewhat rare in the district and finding them

requires stamina. I usually checked street lights at night and turned around rotten wood logs. I also checked for sap excretions on trees for Lucanidae.

I think Lucanidae will become extinct in future, because coffee farmers take out all wood, before it can rot. I have also noticed that the original forest cover is cut and replanted with invasive species, such as Silverwood (*Grevillea robusta*) and *Eucalyptus*, leaving no place for Lucanidae.

June 22nd – June 23rd 2009: Around Mudigere Town, Coffee plantation. A constant light rain was falling all day, so there was no opportunity to find beetles at sap excretions on trees. Luckily, South Indian Lucanidae often hide under rotten tree logs. Thus, in daytime, I went around the plantations and turned around every log that I could find (for an example – Fig. 3). You have to be careful doing this because there are also centipedes, scorpions and snakes hiding. On the first day, I did not find any Lucanidae until that night, when I went to check streetlights and found a medium sized male of *Prosopocoilus giraffa nilgiriensis*, around 75mm (Fig. 4). It was walking on the street. I was very excited and checked for many more hours, but didn't find anything else. Because of the rain, I could not take photographs of that specimen. The next morning again, I went for search for Lucanidae under the tree logs, but again I

Fig. 4: Specimens of *Prosopocoilus giraffa nilgiriensis*.

Fig. 5: L3 larvae of *Odontolabis burmeisteri*.

Fig. 6: A large L3 larva of *Odontolabis burmeisteri*.

Fig. 7: *Prosopocoilus speciosus*, minor male.

Fig. 8: *Prosopocoilus speciosus*, major males.

did not find anything, except for leeches who bit me a lot. Finally in the afternoon I found a very big log with red and white fungus rot; the wood was already very soft. When I turned it around, I saw seven very big larvae of *Odontolabis burmeisteri* (Fig. 5 and Fig 6); I was dancing with happiness. But then I saw something yellow hidden in the soil. I checked and there was a male of *Prosopocoilus speciosus* (Fig. 7, for a picture of a telodont male refer to Fig. 8), a small and rare species. I found one larva of the same species in the same log and kept it in a two-liter glass filled with substrate from that log, to observe how it develops. It was kept at the following temperatures and humidity was very high.

June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
25	24	23	24	24	22	21	21	23	26

To keep the larvae, I had the permission of the University of Mudigere, as they were also interested in more information about larval development.

It pupated in January and hatched as a medium sized male in March.

I also had the opportunity to have a look at an assembly of student collections. They have collected over 15 years, so there are many interesting species. They have one huge male of *O. burmeisteri*, 98mm which was collected in July 2003 (Fig 9). Furthermore, there is a good selection of *P. giraffa nilgiriensis*, *P. speciosus* and a species that I could not identify.

Area 2: Around Kodikanal, Tamil Nadu. 2000 to 2,500 meters above sea level. Kodaikanal has moderate to cold weather. Summer temperatures: 11-20 degree Celsius, Winter: 8-17 degree Celsius. Monsoon is from June to September and Lucanidae can be found from Mid-April until end of August. The evergreen mountain forest around Kodaikanal is still in a very good condition (Fig. 10, 11 and 12) It is a unique South Indian type of forest, called Shola. Shola means forest in the valleys and grassland on top of the hills. The Sholas are shrinking rapidly due to monoculture plantations of pine, eucalyptus and wattle. Furthermore, the forest is very threatened due to woodcutting. There are still a large number of wild animals, such as Indian buffalo, leopards, tigers and others, so walking around can be scary at times. I saw a lot of vipers and cobras. If you want to trek inside the forest, you need permission from the forest department, as most forest areas are under protection. However, I did not go inside protected areas. Again, collection of wildlife is strictly prohibited, so I just took photographs. That really makes me sad, because the species are really beautiful and given the fact that forests are rapidly disappearing they might not be there any more in near future.

Fig. 9: Series of *Odontolabis burmeisteri*.

Fig. 10: View of Kodaikanal Forest – an interesting mix of small fields and primary and secondary forests.

Figure 11: A mountain ridge and secondary forest, habitat of several interesting scarab species.

Fig. 12: Secondary growth with Wattle trees, good location to spot insects.

Fig. 13: *Hexarthrius davisoni* walking up a tree.

July 31st – August 2nd 2008 :30 km. of Kodaikanal, secondary forest. Cloudy sky, temperatures around 25 degrees Celsius, no rains. The area is very humid and there are legions of leeches (refer to Figure 1 again, this is a standard if out in forests during monsoon). Since it was a sunny day, I was checking the trees for beetles, as well as turning fallen logs. I started in the early morning and checked for trees. There is a lot of disturbed habitat, where the only tree species is Wattle. I was told by locals that Lucanidae would be there nonetheless. It was very difficult to walk, because there was a thick undergrowth of fern. However, after two hours of searching I saw something reddish on one of the trees. I went closer and checked: A large male of *Hexarthrius davisoni* (Fig. 13). I measured it and it had 75mm. I looked more closely and there were also two females. Strangely, I always found more females of *H. davisoni* than males. *H. davisoni* is a very alert species, if disturbed they just fall of the tree immediately and then hide under leaf litter. I also found that *H. davisoni* is very active during the day, I could see them flying around trees. That day I realized that something very great happened. *Hexarthrius davisoni* have adapted the Australian Wattle tree as a food plant, both for imagines and larvae; I even found larvae in rotten Wattle wood.

Many birds are also hunting for beetles, so I found many Lucanidae fragments (Fig 14). I was very happy when I found fragments of an aberrant *Odontolabis delesserti* male (Fig 15). The mandibles were really stout and short. I think it is the most beautiful variation of that species that I have ever seen. *O. delesserti* is rare in the area, but in the afternoon, after walking for many hours and getting very exhausted, I managed to spot something black and yellow on a wattle tree: A beautiful major 78mm male (Fig 16). It is a rare sight and friends assured me they usually see major males only once or twice a year. In the evening I found a female of *O. delesserti* under a street light. Under those lights, a larger Rutelinid, probably an *Anomala,* was quite common, too. (Fig. 17).

The next day, I was walking around and turning a lot of wood. There are hundreds of Passalidae (Fig 18), as well as large forest cockroaches. In some very dry and hard log, I found a small black beetle, which really surprised me, because I had found a male of the extremely rare *Dorcus rugosus* (Fig.19 and Fig. 20). It is a very small species and does not come to light, and even if you search for hours, usually you can find only a few specimen. I also saw a few more *H. davisoni* feeding on small Wattle trees (Fig. 21). The females usually chew some hole in

Fig. 14: The most avid Lucanidae collectors in South India seem to be the birds.

Fig. 15: Aberrant *Odontolabis delesserti* fragment.

Fig. 16: *Odontolabis delesserti* is a rare species, compared with other Lucanidae species within the same habitat.

Fig. 17: An interesting Rutelid species, quite common under lights.

Fig. 18: Passalidae, the bane of anyone looking for Lucanidae.

the tree and after that, males come and eat, but protect the females by shielding them from bird attacks. No wonder, 80% of beetle fragments I found were male.

I usually found L1 larvae of *H. davisoni* in July, L3 in October and pupae in April and March. Behavior of larva is similar to *Lucanus*. They live in the soil under their food source. Only L3 moves inside the wood. I think there is much competition from Passalidae, because I have never found both families in one place and Passalidae are extremely abundant.

H. davisoni, *O. delesserti* and *D. rugosus* need a cold climate for breeding. If you plan to breed these species, please do not be tricked by the fact that they come from extremely hot South India; they thrive best around and below 20 degree Celsius. Even *O. burmeisteri*, *P. giraffa nilgiriensis* and *P. speciosus*, require lower temperatures. I think to succeed breeding giant size you have to keep the temperature around 20 degrees. I know that some of the species found their way to Japanese breeders and hope that I could give you some insight in the biology of these beautiful Indian species. It is a pity that collection is illegal, but even watching and taking pictures is a great fun. These memories will stay with me forever. I would like to thank my friends in India for showing me around.

Fig. 19: A pair of *Dorcus rugosus*, a small and rare species.

Fig. 21: Female *Hexarthrius davisoni* feeding on a sap flow.

Fig. 20: Major male for *Dorcus rugosus*.

Georges Brossard, an Advocate for Insects

by Stéphane Le Tirant and Brett C. Ratcliffe

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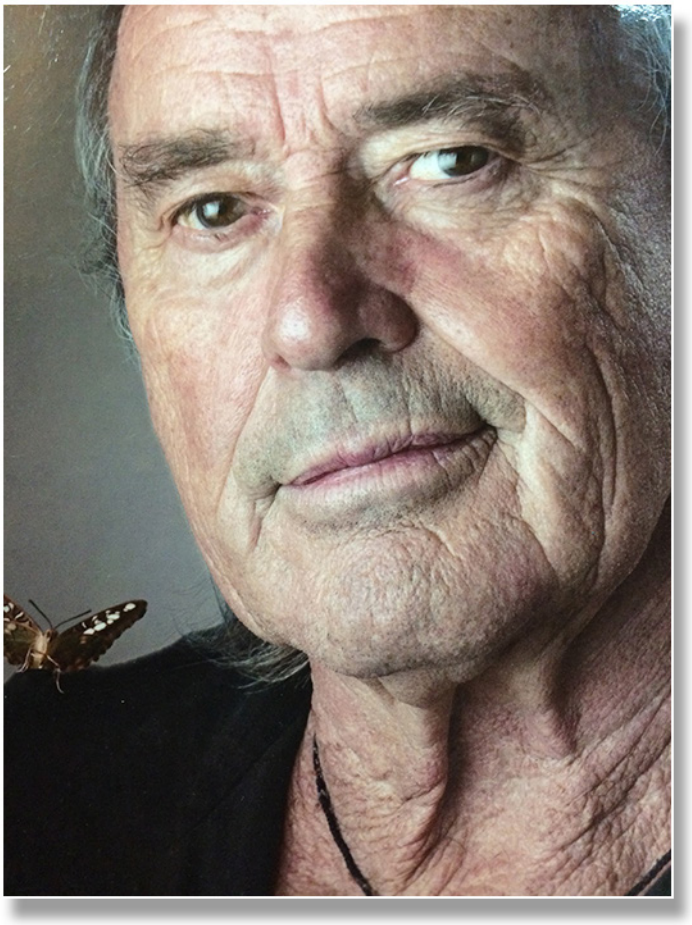


Georges Brossard.

People are strange. They've built botanical gardens for plants, planetariums for understanding the planets, zoos for large animals, aviaries for birds, and aquariums for fish, but nothing for insects! It's as though this class of animals doesn't count. And yet, of all the creatures on Earth, insects are some of the most important. They are food sources, garbage collectors, decomposers, producers, controllers and pollinators. And what do people do for them in return? We hunt them down with insecticides, pesticides, fungicides and herbicides. It's time to reconcile humans with insects, a very classy class. I'm going to build a temple to honour insects, and I'm going to call it the Insectarium.

— Georges Brossard, 1978

Georges Brossard was born into a family of farmers. The city of Brossard in Quebec, Canada, was founded by his father, Georges-Henri Brossard. Georges Brossard studied law and worked as a notary for a number of years before retiring early and devoting himself entirely to entomology, his real passion.

At age 38, after making his fortune, he became a globetrotter, travelling to over 100 countries and collecting hundreds of thousands of insects. That's when he decided to share them with Quebeckers, founding the Montréal Insectarium after donating his large collection. It was a great success, attracting much curiosity and even spawning other similar institutions. Thanks to Brossard, insectariums were opened in Newfoundland, China, New Orleans, Quebec City, the Gaspé, and South Africa. He went on to share his interest in and passion for insects through the Insectia series televised on the National Geographic and Discovery channels and seen in over 150 countries. Next came a film (*The Blue Butterfly*) based on a true story, an experience he had with a young boy and the Children's Wish Foundation. See *Scarabs* #19, page 16 for a review. The boy was a terminal cancer patient whose final wish was to catch a blue butterfly (*Morpho*). Brossard helped him realize his dream and just a few months later, to the astonishment of the boy's attending physicians, he was completely cured.

There is nothing ordinary about Georges Brossard. He is one of those special people who are blessed with an exceptional intellect, energy, creativity, and persuasive abilities. A polyglot, gymnast, legal buff, astute businessman, entomologist, museologist, talented fisherman, and airplane pilot, he has circled the globe several times. He is a fascinating speaker, and gave

Georges in South Africa.

Georges outdoing the camel in Morocco.

An older Georges at the monarch butterfly overwintering site in Mexico.

Georges receiving the Order of Canada.

the keynote address at the 2000 Joint Annual Meeting of the Entomological Societies of America, Canada, and Quebec.

His many achievements have earned him countless honors. He is a member of the Ordre du Québec and the Order of Canada. McGill University and the Université du Québec à Trois-Rivières have both awarded him honorary doctorates, and he has received many local, national, and international medals and awards, including the prestigious White Magnolia, for creating China's first insectarium. He was recently inducted into the Academy of Great Montrealers and made an honorary member of the Quebec National Assembly.

Brossard continues to speak widely about insects in Quebec and around the world. He has a number of plans in the works and doubtless has other great accomplishments in store. Scarab beetles have always been Georges Brossard's favourite insects, especially the large *Dynastes* species. Georges' "bug room" is, in fact, a remarkably mind boggling series of rooms in his house that are literally jammed packed with thousands of specimens and memorabilia of his travels around the world as can be seen in the accompanying images.

Les hommes sont étranges. Ils ont construit des Jardins botaniques pour les plantes, des planétariums pour la compréhension des planètes, des zoos pour les grands animaux, des volières pour les oiseaux et des aquariums pour les poissons, mais pour les insectes rien ! C'est comme si cette classe animale n'avait pas de classe. Pourtant, de tous les animaux qui vivent sur terre, les insectes sont parmi les plus importants. Ils sont des nourrisseurs, des vidangeurs, des décomposeurs, des producteurs, des contrôleurs, des pollinisateurs. Et que font les hommes en retour ? Ils les chassent à coup d'insecticides, pesticides, fongicides, herbicides. Il est temps de réconcilier les hommes avec cette classe qui a beaucoup de classe, les insectes. Je vais construire un temple pour honorer les insectes, que je nommerai Insectarium.

Georges Brossard, 1978

Georges Brossard est un fils de cultivateur. Son père (Georges-Henri Brossard) est le fondateur de la ville de Brossard. Bien avant de devenir entomologiste, Georges Brossard a fait des études de droit et fut notaire pendant plusieurs années avant de prendre une retraite et se consacrer entièrement aux insectes, sa véritable passion.

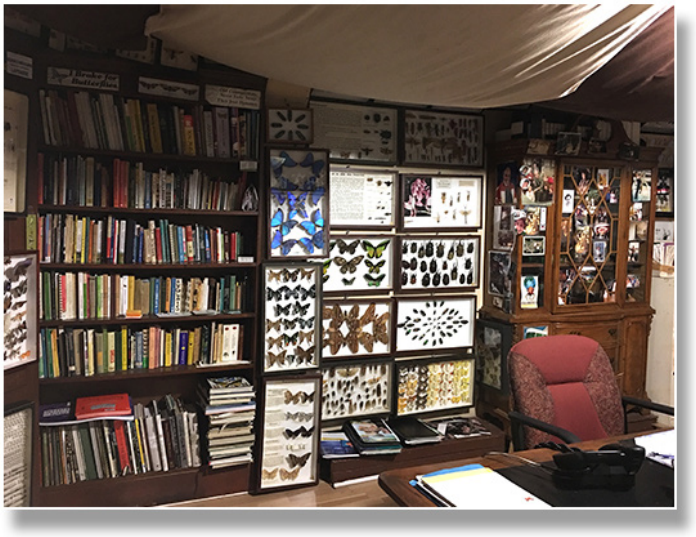
Ron Cave and Brett Ratcliffe with Georges in his bug room, July 2017.

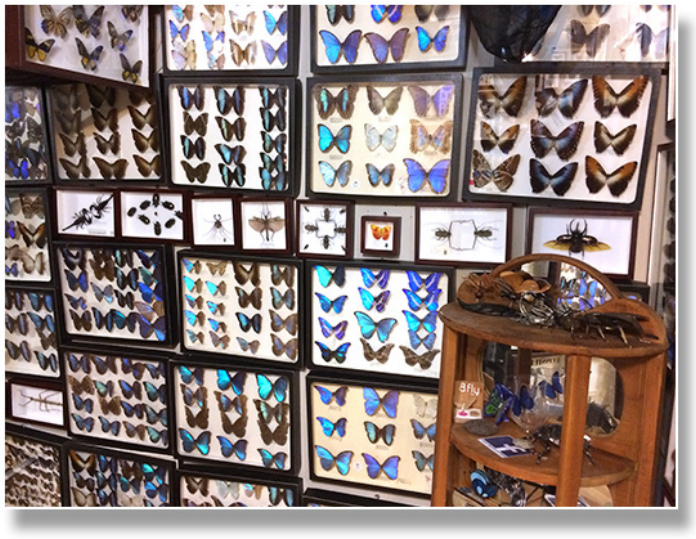
This and the following images depict the multiple bug rooms of Georges Brossard in his home in St-Bruno, Canada.

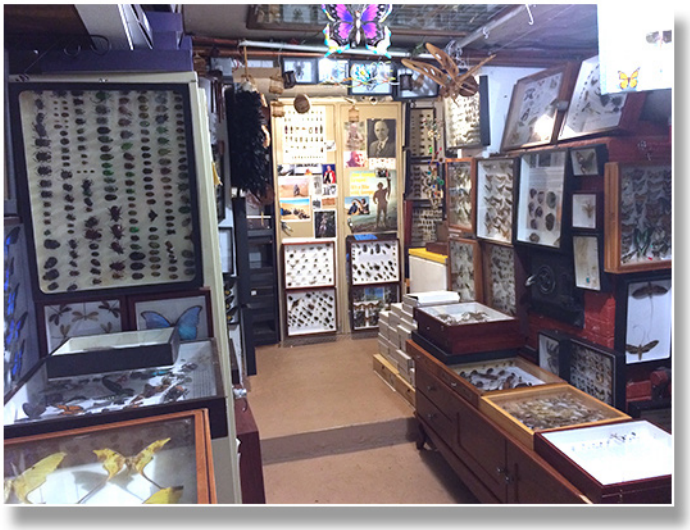
À l'âge de 38 ans, après avoir fait fortune, il part dans le monde entier, foule le sol de plus de 100 pays et capture plusieurs centaines de milliers d'insectes. Il décide alors d'en faire profiter les Québécois et fondera l'Insectarium de Montréal après avoir donné sa collection. Le succès de ce musée pique la curiosité et fait des petits. Ainsi, grâce à Georges Brossard, des Insectariums verront le jour à Terre-Neuve, en Chine, à la Nouvelle-Orléans, à Québec, en Gaspésie et en Afrique du Sud. Par la suite, Georges voit son intérêt et sa passion pour les insectes se propager grâce à la série Insectia qui sera vendue dans plus de 150 pays et qui sera diffusée par les chaines National Geographic Channel & Discovery. Naîtra ensuite un film (Le papillon bleu) sur une histoire véridique qu'il a vécue avec un jeune enfant malade et la Fondation « Rêves d'Enfants ». Voir Scarabs #19, page 16 pour en savoir plus. Ce jeune malade en phase terminale avait comme dernier souhait de capturer un papillon bleu (*Morpho*). Georges l'aida à réaliser son rêve et quelques mois plus tard, cet enfant était complètement guéri à la stupéfaction des médecins traitants.

Georges Brossard n'a rien d'un homme normal. Il est de ceux qui ont des capacités intellectuelles et physiques exceptionnelles et qui possèdent des forces créatrices et de persuasion hors du commun. Cet homme est polyglotte, gymnaste, féru de droit, homme d'affaires avisé, entomologiste, muséologue, pêcheur exceptionnel, pilote d'avion, il a fait le tour du monde plusieurs fois et il est maître de conférences. Il fut d'ailleurs le conférencier invité au congrès des Sociétés d'entomologie des États-Unis, du Canada et du Québec en l'an 2000.

Aujourd'hui, après tant de réalisations, Georges Brossard récolte de nombreux honneurs. Il est aujourd'hui membre de l'Ordre du Québec et de l'Ordre du Canada. Il a reçu deux doctorats honorifiques (Université McGill et Université du Québec à Trois-Rivières). Il est récipiendaire de nombreuses médailles et prix locaux, nationaux et internationaux dont le prestigieux Magnolia blanc décerné pour la création du premier Insectarium en Chine. Récemment, il a été nommé « Grand Montréalais » et membre d'honneur de l'Assemblée nationale du Québec.







Georges Brossard continue aujourd'hui ses conférences sur les insectes au Québec et ailleurs dans le monde. Il prépare de nombreux autres projets et nul doute qu'il nous réserve encore quelques grandes réalisations. Les insectes préférés de Georges Brossard ont toujours été les scarabées et en particulier les grands *Dynastes* ! La maison de Georges, avec son « Insectarium » personnel, est une incroyable série de pièces pleines d'insectes et de souvenirs de ses voyages à travers le monde, comme on peut le voir sur les images de ce portrait.

The bronze plaque you see at the back of the room is the effigy of Georges' father, Georges Henri Brossard, who was the mayor of the town that bears his name and was never defeated before his retirement.

In a Future Issue: Collecting Apparel

by the Editors

What is this? Yet another attempt at forced humor by the Editors? No, is a prototype of a new line of collecting apparel conceived and designed by Editor Emeritus Bill Warner. The mirror-like metallic fabric is specifically designed to confuse wary *Chrysina* species, allowing for more efficient collecting. For this project Bill pulled out ALL the stops. He hired, among others, Romanian Supermodel Ioana Mihalache (Miss Grand International Romania 2016, Miss Earth Romania 2013, Miss Universe Romania 2013), seen above, to test this innovative apparel on a tropical working vacation. Editor Rich also designed a stunning metallic copper-red suit studded with gold flecks, but sadly could not find a supermodel to test it out. Stay tuned!