# SCARABS

*Ef það ópefur, peir vilja koma*

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## Dungers and Chafers – A Trip to South Africa

### by Ted C. MacRae

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*"There is always something new out of Africa." – Pliny the Elder*

I've been collecting beetles for a more than a quarter century now, and during that time I've had the good fortune to collect in many places across the U.S. and abroad. For the most part, my travels have been confined to the Western Hemisphere (not that I consider this terribly confining!); however, some years ago I had the opportunity to go to South Africa and spend time in the field during their spring season (November to December) with my friend and colleague, Chuck Bellamy. At the time, Chuck was in the middle of his second stint at the Transvaal Museum of Natural History in Pretoria, where he was busy assembling an impressive body of work on South African Buprestidae. I, too, consider this family of beetles to be my primary interest, so I suppose at this point I must beg forgiveness from the readers of this newsletter for my intrusion into this scarab-dominated realm. As justification, I confess that I've always had difficulty narrowing my scope to just one family of beetles (or even to one order of insects). In fact, treehoppers – of all things – were the first insects that captured my taxonomic interest while I was studying leafhopper life histories in graduate school. It wasn't long, however, before I "saw the light" and started concentrating on beetles. With so many beetles to choose from, I began collecting all of the favorites – bycids and tigers and bups (oh my!), scarabs and clerids, blisters and clicks. If it possessed elytra of any manner, I collected it. Of course, a focus that encompassed 25% of all life forms quickly became overwhelming, so I eventually

**Photo 1: The author standing next to a termite mound.**

*Editors Note: Since we had some extra space in the sidebars, we included a few photos of Ted's prize buprestids. These depict why Ted traveled to South Africa in the first place.*

narrowed my focus even more and, thus, settled on woodboring beetles – first cerambycids and ultimately buprestids. I've never lost my interest in these other groups, however, and when traveling to another country, especially one as exotic as Africa, all bets are off – I'm back to collecting not only my chosen specialty but anything that looks "cool." Scarabs are definitely cool, and during my trip to South Africa, I found myself encountering a diversity of colors and forms that were too good to pass up. So I collected them – lots of them, and I'd like to highlight here a few of the more interesting experiences I had in finding them. I'll fight the urge to talk about the many cool buprestids that I found, and hopefully my contribution will not "bump" an otherwise worthy submission by someone who has had the good sense to consider scarabs as their first love.

My trip was to last for two weeks, which we divided into two one-week excursions. After spending a few days enjoying the beautiful city of Pretoria, we joined Chuck's colleagues at the Transvaal Museum, mammologist Duncan Macfadyen and arachnologist Paul Bayliss. Our destination for this first week was Borakalalo National Park, located ~60 km north of Brits in North West Province. Borakalalo consists of 13,000 hectacres of acacia and deciduous woodland and open bushveld surrounding the 800 hectacres Klipvoor Dam. Riverine forest lines the banks of the Moretele River, which runs through Klipvoor. The park is touted for its diversity of wildlife – over 350 bird species have been documented within the park (including 11 species of eagle), and an enormous variety of antelope and other mammals may also be viewed. Considering its status as a wildlife reserve, we would see many such animals during our visit, but it was the vervet monkeys who immediately captured my fascination. Watching them comically running, jumping, climbing, chasing and play fighting was a sight to behold; however, my fascination with them would be short-lived. More on this later…

After arriving at the park, I could hardly contain myself – I was so anxious to start collecting (Photo 1). We drove through the park for a little bit looking for a good spot to pull over and begin the hunt. After finding such as spot, I grabbed my trusty beating sheet and began doing what I have done so many times before – walking up to a tree, giving a branch a whack with the

handle of my net, and hoping to see some prized buprestid laying on the beating sheet. The habitat was ideal for this – dominated by low, spreading acacias such as *Acacia tortilis* and *A. karoo*. Buprestids love acacias! I had already learned this in my travels through the American desert southwest and down into Mexico and South America – surely it was the same in South Africa. The first whack yielded nothing – typical. Even when collecting is good, buprestids are never "dripping from the trees," and often one must literally beat dozens and dozens of trees to really get a good idea of the diversity and abundance of buprestid species that are active in a given area. I whacked a few more trees, with similar results. I then spotted one particularly large acacia tree – something about it said, "beat me!" I walked over to it and gave a branch a whack. All at once, it seemed as though the world was exploding! The air was suddenly abuzz with dozens of large, flying insects, whirring and swirling all around me. My first thought in that initial moment of terror was that I had whacked a hornet's nest – who knew what kinds of deadly, venomous wasps one might encounter in Africa? Instinctively I ducked and started running, but within a few moments I realized that I was not being chased. Cautiously, I sneaked back towards the tree (after stuffing my heart back down my throat) and realized that they were not hornets after all, but instead beetles. I looked more closely and saw that the tree was literally alive with dozens and dozens of large, green cetoniines resembling our own green June beetle, *Cotinis nitida* (L.), which seemed to be attracted to the small, white blooms that covered the tree in profusion. I netted a few of the beetles, which I would later determine to represent the common savannah species *Dischista cincta* (de Geer) (Photo 2). Such was my welcome to Africa, where it seemed the trees literally are 'dripping' with beetles!

Over the next several days, I would collect a nice diversity of buprestids, primarily small species in the enormous genera

***Acmaeodera (Paracmaeodera) viridaenea swierstrae* Obenberger.**

**Photo 2: *Dischista cincta* (de Geer), a common species in the savannah woodland of South Africa.**

***Acmaeodera (s. str.) grata grata* Boheman.**

*Acmaeodera* and *Agrilus*, off of these same species of acacia, but never again did I encounter an aggregation of *Dischista cincta* like the one I saw on that very first day in Africa. I learned to focus my attention on certain species of trees, which included not only *Acacia karoo* and *A. tortilis*, but also two other leguminous trees – *Dichrostachys cinerea* and *Peltophorum africanum* – and the combretaceous *Terminalia sericea*. (At this point, I must acknowledge the considerable botanical expertise of Duncan, who grew up on South Africa's game reserves with his father serving as a game warden. Duncan knew the identity of almost every plant we encountered, and it was quite a treat to have my own 'personal botanist' on hand to identify whatever plant on which I collected a particular species of beetle.) In addition to the buprestid beetles I collected off of these plant species, I also encountered a dizzying diversity of chafers such as *Clinteroides permutans* (Burmeister), *Cyrtothyraea testaceoguttata* (Blanchard) (Photo 3), *Discopeltis mashona* (Péringuey), *Dolichostethus levis* (Janson), *Elaphinis (Micrelaphinis) latecostata* Boheman, *Mausoleopsis amabilis* (Schaum), *Plaesiorrhinella (Chondrorrhina) trivittata* (Schaum), and *Rhinocoeta armata* Boheman. Particularly abundant were individuals of the speciose genus *Leucoscelis*, primarily *L. amethystina* (MacLeay) and *L. vitticollis* (Boheman) – variable species which I found to be especially fond of the blossoms of *P. africanum*, and a nice series of the all-black *Tephraea morosa* Schaum were found on flowers of *T. sericea*. I also captured in flight several specimens of a large, robust, black species that I assumed must belong to the tribe Cetoniini. This turned out to be the large hive beetle, *Oplostomus fuligineus* (Olivier), more closely related to *Cremastocheilus* than to true cetoniines and considered a minor pest in South Africa due to its parasitic colonization of bee hives.

**Photo 3: *Cyrtothyraea testaceoguttata* (Blanchard) on blossoms of *Peltophorum africanum*.**

Chafers were not the only scarabs I encountered in abundance at Borakalalo, and I'll give you one guess as to what other scarab group I encountered in abundance at this **mammal game reserve**. That's right, dung beetles. Never before have I seen such an abundance and diversity of dung beetles in one spot, but then again, never before have I seen such an abundance of dung! The ground was littered with the stuff – antelope such as gemsbok

and impala, warthogs, giraffes, and a host of other mammals thrive in the protected confines of the park, and the seasonally dry climate allows their dung to dry quickly and accumulate rather than breaking down and disappearing. It did, however, take a few days before I became aware of the area's dung beetle diversity. Prior to our arrival in the park, the weather had been dry for some time, and so it remained for the first few days we were there. I collected a smattering of different dung beetles during that time, but it seemed like they should be more abundant considering the abundance of available resource. Our third day in the park was interrupted by heavy thundershowers that moved through during the afternoon. The next morning, as we arose and begin wandering away from the camp, the air seemed literally abuzz with dung beetles. They were flying everywhere and crawling all over the ground, frantically rolling and fighting over the reconstituted pieces of dung. Big, black scarabaeines proper such as *Kheper clericus* (Boheman) and *Scarabaeus galenus* Westwood (Photo 4), the small metallic *Phalops ardea* Klug, the attractive green iridescent species *Garetta nitens* (Olivier) and *Gymnopleurus virens* Erichson, their darkened relative *Allogymnopleurus thalassinum* (Klug) (Photo 5), and the tiny little *Sisyphus costatus* (Thunberg), standing tall on its elongated hind legs while

**Photo 4: *Scarabaeus galenus* (Westwood).**

**Photo 5: *Allogymnopleurus thalassinum* (Klug) individuals fighting over a mammal dung ball.**

pushing dung with its forward pairs of legs (opposite of what I've seen in any other dung beetle), all made their sudden appearance. I spent some time watching one *S. galenus* individual excavating a burrow for the prized piece of poop it had snatched (Photo 6). The most impressive dunger that I saw, however, was the enormous, flattened *Pachylomera femoralis* Kirby (Photo 7). Looking like flying Tonka trucks and sounding like diesel engines from real trucks, their low-pitched, rumbling buzz filled the air as they searched

**Photo 6: *Scarabaeus galenus* (Westwood) excavating a burrow.**

**Photo 7: *Pachylomera femorata* Kirby.**

among the freshly moistened turds. So loud was the noise caused by the beating of their wings that several times I ducked thinking one was about to collide with me. This sudden dunger super-diversity continued into the night, as *Anachalcos convexus* Boheman, *Catharsius* sp., *Copris elphenor* Klug, *Metacatharsius* sp., *Pedaria* sp., *Scarabaeus goryi* (Laporte), three species of *Onitis*, *Caccobius ferrugineus* (Fåhraeus), *Digitonthophagus gazella* (Fabricius), and nearly a dozen species of *Onthophagus* flew to our ultraviolet light-illuminated sheet.

Back to the vervet monkeys – their cuteness was pure deception, and it wasn't long before I realized they were nothing more than evil little minions. Every morning they awoke me far earlier than I desired by scampering and chasing each other across the roof of our tent, and they stole any items left in the camp unattended. Our tents had to be zippered shut and the zipper tabs tied down to keep them out while we were away during the day. This worked fine during the first 4 days, but on the last day they managed to loosen the ties and zipper just enough to breach the tent. Things looked amiss when we returned to camp and saw monkey crap all over the porch, and when we went inside the tent we found they had scattered pots and dishes all about, gotten into the food and strewn corn shucks across the floor, and in a final little monkey thumb to the nose, stolen my glasses! To this day, I still imagine every now and then some little monkey sitting in a tree – wearing my glasses.

After a quick two-day return to Pretoria, we again headed north, this time a bit further to the magnificent Waterberg Mountain Range in the Northern Province. Here we were guests of Susan Strauss at her Geelhoutbos farm, where we collected in the bushveld landscape below impressive sandstone buttresses. My main quarry here was buprestid beetles in the genus *Evides* – large, brilliant-green, heavily-sculptured chalcophorines that must be

seen to be believed. In this area, two species – *E. intersttialis* Obenberger and *E. pubiventris* (Laporte & Gory) – had been found associated with *Lannea discolor* (related to sumac and poison ivy, but fortunately not toxic). Catching them would not be easy, as they frequented the terminals of the uppermost branches of these tall trees. A long-handled tropics net and lots of patience were mandatory, but persistence paid off, and after several episodes of standing with my neck craned upward (Photo 8) I was fortunate to catch at least a few specimens of each species. A nice variety of chafers were also found in this area, with several *Polybaphes balteata* (de Geer) being taken on the same *Lannea* trees as the *Evides*. One of the most attractive scarabs that I found during the trip was *Anisorrhina (Melinesthes) algoensis* (Westwood) (Photo 9), which was found in numbers on flowers of *Dichrostachys cinerea*. Both sexes, each representing one of the two color forms present at this location, can be seen in the photo (the male has the elongated clypeal horns). *Plaesiorrhinella trivittata* was found here also alongside *A. algoensis*, and a variety of other cetoniines were taken in smaller numbers by beating various flowering trees and shrubs. These include *Amazula suavis* (Burmeister), *Clinteroides permutans*, another *Dolichostethus* sp. (not *levis*), *Mausoleopsis amabilis*, *Niphetophora carneola* (Burmeister), *Pachnodella impressa* (Goldfuss), *Rhabdotis*

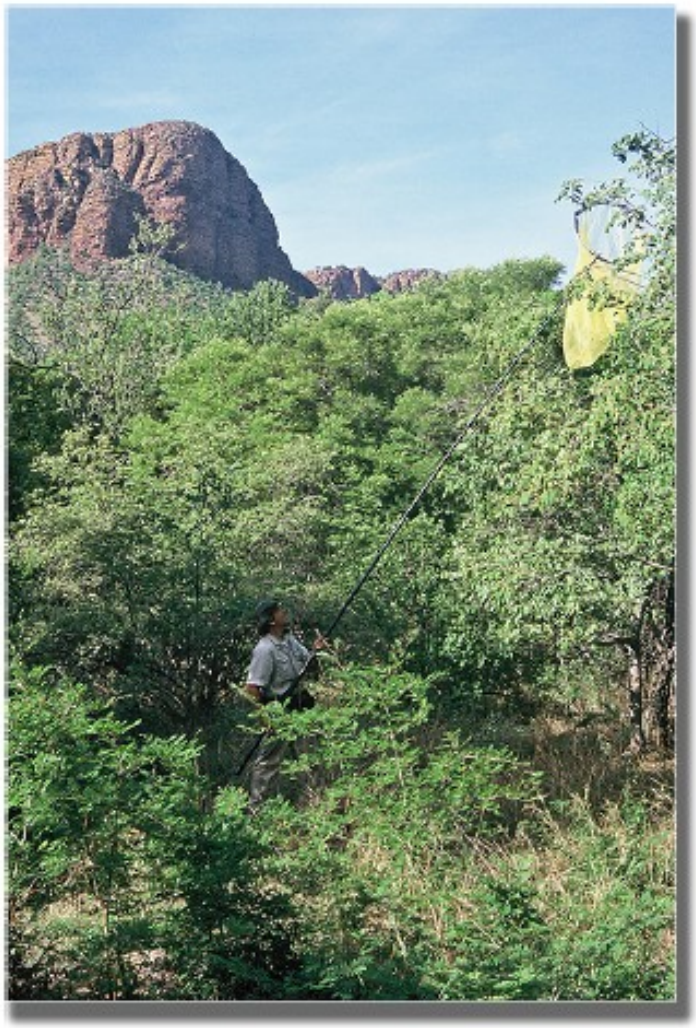


**Photo 8: The author attempts to capture *Evides* buprestids on upper branch tips of *Lannea discolor*.**

*albinigra* Burmeister, and *Xeloma leprosa* (Burmeister). A few individuals of a particularly attractive species – *Myodermum rufum* Waterhouse (Photo 10) in the tribe Trichiini – were found clinging to dead stems, and the highly variable species *Tephraea dichroa* (Schaum) (Photo 11) – representing three color forms (black/orange, purple/orange, and all-green) – was found abundantly on stems of a presumed *Solanum* sp. Only a smattering of dungers was seen in the Waterberg, almost certainly due to much scarcer resource than at Borakalalo that

**Photo 9: *Anisorrhina (Melinesthes) algoensis* (Westwood) on flowers of *Dichrostachys cinerea*.**

**Photo 10: *Myodermum rufum* Waterhouse clinging to dead stem.**

consisted almost exclusively of cattle dung. Nevertheless, several species not seen at Borakalalo were seen here, including *Onitis fulgidus* Klug at lights, and *Cleptocaccobius* sp., *Phalops boschas* Klug, and *Proagoderus sapphirinus* (Fåhraeus) associated with cattle dung.

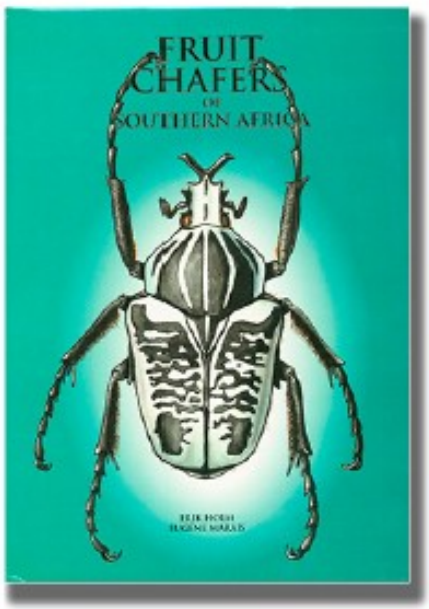
In reporting on these finds, I must acknowledge the considerable assistance of Dr. Bruce Gill, Entomology Head at the Ontario Plant Laboratories, C.F.I.A., who provided mostly species-level identifications on all of the non-cetoniine material that I collected. The cetoniines were identified by me using the recently published *Fruit Chafers of Southern Africa*, by Erik Holm and Eugène Marais. This excellent book contains keys, line drawings, beautiful water colorings, distribution maps, and notes on virtually every chafer species known to occur in Africa south of the tropics. As a result, I timidly declare with a fair degree of confidence that my species determinations in this group are mostly accurate (although I welcome any inquiries by readers interested in confirming particular species). Based on these combined efforts, the nearly 500 scarab specimens that I collected represent some 84 species in 54 genera – not bad for a buprestophile using nothing more than a beating sheet, a single ultraviolet light, and his buprestid search image-clouded eyes. Those interested can view a complete detailing of the species I collected by visiting my website (http:beetlesinthebush.blogspot.com) and viewing the Afrotropical

listings in my Scarabaeoidea inventory. I sometimes imagine what additional diversity of scarabs I might have seen had I employed some of the many trapping/ collecting techniques utilized by true scarab lovers – digging up rodent burrows, setting baited traps, and placing a greater number and variety of lights than our single ultraviolet light. But then I look at those gorgeous specimens of *Evides interstitialis* and *E. pubiventris*, recall the time that I invested in capturing them, and decided that it was time well spent.

***Evides pubiventris*** **(Laporte & Gory).**

***Aegelia petelii*** **(Gory).**

**Photo 11: *Tephraea dichroa* (Schaum) (two color forms) on stem of presumed *Solanum* sp.**




***Fruit Chafers of Southern Africa,***
**by Erik Holm and Eugéne Marais.**