The Buprestids Down the Street

John Acorn

On 5 June 1975, I was 17. Watching through binoculars, sitting in a folding lawn chair just inside the edge of a wooded ravine a block from our home in Edmonton, Alberta, my gaze was fixed on a brassy, inch-long beetle as it crawled up the sunlit side of an aspen poplar tree. My objective? To spend time with this insect and immerse myself in its life, and to learn something that no one else knew. To achieve this, I made sure everything the beetle did wound up in my notes. Here's an excerpt: "it crawled upwards and around the trunk/ moved my chair/ it kept crawling up to 4 m, and stopped on a black patch/sun went behind cloud (3:04 p.m.)/it stopped moving/moved my chair again (darn trees in the way)/it moved up a bit, slowly 3 dm/stopped/moved up 5 cm." I was such a nerd, I even used decimeters. Page after page of this stuff makes for mind-numbing reading, and I couldn't have been more inductive had I tried.

When I envision myself back then, and my passion for these beetles, I think of the many discussions I have had lately on the topic of inspiring young people to become entomologists. It is natural to project our own beginnings on the youth of today, and I think we all wonder what we can learn from our own stories. So I've been thinking about what was going on in my head back then, and what I can do to drive another human being to the same sort of obsession that worked so well for me.

Thinking back, I already considered myself something of an insect expert by the time I reached high school. I had been collecting for more than a decade, and I loved bluffing my way into the university library on winter afternoons to scan the shelves. My favorite authors were Edwin Way Teale, Howard Ensign Evans, and Jean-Henri Fabre. These men shared a love of insect behavior, but more importantly, they romanticized the science of insect watching in a way that deeply appealed to me. I had read quite a bit of Konrad Lorenz and Niko Tinbergen, and I felt I was ready to do some serious ethology of my own. The most famous student of animal behavior ever, Jane Goodall, was already a superstar by then, and she gave the study of animal behavior an image that seemed perfectly situated somewhere between cutting-edge science and nature mysticism. So there I was, alone in my lawn chair facing my own version of the chimpanzee, "*Dicerca tenebrica*" (which later proved to be a mixture of *D. tenebrica* and *D. callosa*) and the very similar adults of *Poecilonota cyanipes*, all members of the family Buprestidae. Perhaps, like the chimps of Gombe Stream, they would accept me as one of their troop.

So why buprestids? I loved other beetles too, and butterflies, and frogs, and even birds, but for some reason I came to the conclusion that buprestids were a perfect subject for behavior study. They were beautiful, but almost no one noticed them—even me, for most of my life. My first encounter with a buprestid happened when I was perhaps seven years old, when I snagged a passing *Dicerca* from the air with my butterfly net. An *Okanagana* cicada sang in a nearby tree, and since I had never actually seen a cicada, I thought for some time that was what I caught. A decade later, I read somewhere that you can find buprestids on the sunlit sides of trees. That same afternoon, I walked to the top of Quesnell Ravine in Edmonton, and there sat the buprestids, on aspen trees I had known all my life. With their bronze and brassy iridescence, robotic movements, and distinctive tall-eyed facial expression, I couldn't help but fall in love with them.

So what did I discover? Well, in some ways quite a bit, and in others not much new at all. The beetles clearly preferred partly dead poplars to healthy or long-dead trees, and they spent most of their time on the trunks, in sunlight. I marked some with spots of acrylic paint and it amazed me beyond belief that I actually recaptured one, some twenty meters from the tree on which it was marked, a full two days later. The females clearly laid eggs in fissures in the bark (you could see them probing with their ovipositors), and the males were perpetually mounting other beetles, male and female alike. All of these observations were consistent with the only published information I could find about the behavior of adult buprestids—a short passage I painstakingly translated from the French in Silvin Augustin de Marseul's "Monographie des buprestides d'Europe, du nord de l'Afrique et de l'Asie." Published in 1865, this book looked, felt, and smelled like something out of a fantasy movie, and despite what you may have heard about us bilingual Canadians, translating French was difficult for a western boy like me. The whole thing made me feel I was in touch with the arcane, and the wonderful.

Photo courtesy Heather Proctor.

Two discoveries made it all worthwhile for me at the time. First, I recorded a couple of instances in which male beetles would

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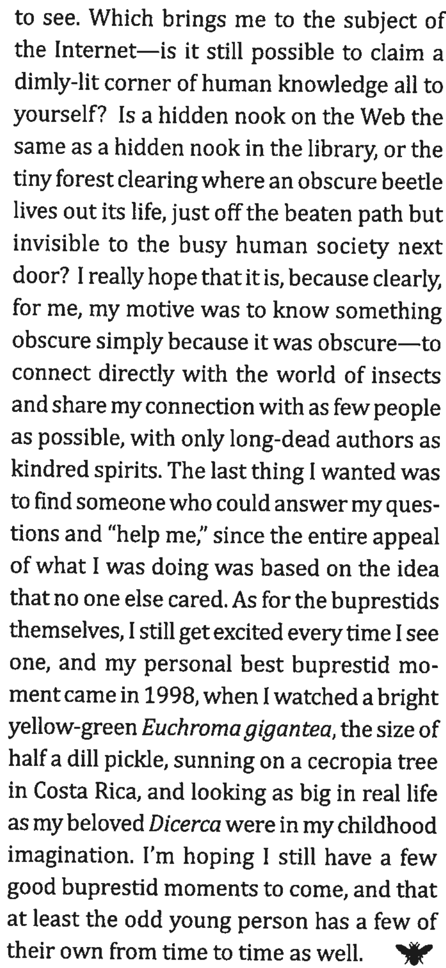
do quick push-ups when they encountered another beetle close by on the bark. It reminded me of my pet anole lizards, which had been an earlier subject of my observational obsession. I couldn't find any mention of this behavior by buprestids in the library, and I was sure it was something new and exciting. I wish I had uncovered the early paper by Bowditch (1896) in which he reported that *Chrysobothris* buprestids do something similar, during which they tap their abdomen against the tree, and that you can sometimes attract them by tapping back with a fingernail. But I never heard any sound when the *Dicerca* did their push-ups, and I doubt they were making any.

My second grand discovery was the conclusion that my beetles didn't feed as adults. I saw one "definitely chewing on the loose bark," but no other evidence of feeding appears in my notes. I offered all sorts of potentially palatable items to beetles I kept in a terrarium (made from an old battery jar), but they rejected them all. The glass of that rectangular "jar" was like a warped, antique window, adding even further to the charm of the beetles within. The adult season for these beetles is quite long, and to this day, I'm not sure if they feed and live a long time, or emerge non-synchronously and live only until they starve, but at the time I was pretty sure that if they did something, I had seen it. I suppose I could always go back and find out.

The truth is that my deep buprestid phase lasted only about a month. Later on, as an undergraduate, I tried to learn the local buprestid fauna by working my way through the collection at the E. H. Strickland Entomological Museum, and writing down the label data from each and every specimen, but by then other things were competing for my attention. By the way, those same Strickland Museum buprestids now have all of their data online, for the whole world



to see. Which brings me to the subject of the Internet—is it still possible to claim a dimly-lit corner of human knowledge all to yourself? Is a hidden nook on the Web the same as a hidden nook in the library, or the tiny forest clearing where an obscure beetle lives out its life, just off the beaten path but invisible to the busy human society next door? I really hope that it is, because clearly, for me, my motive was to know something obscure simply because it was obscure—to connect directly with the world of insects and share my connection with as few people as possible, with only long-dead authors as kindred spirits. The last thing I wanted was to find someone who could answer my questions and "help me," since the entire appeal of what I was doing was based on the idea that no one else cared. As for the buprestids themselves, I still get excited every time I see one, and my personal best buprestid moment came in 1998, when I watched a bright yellow-green *Euchroma gigantea*, the size of half a dill pickle, sunning on a cecropia tree in Costa Rica, and looking as big in real life as my beloved *Dicerca* were in my childhood imagination. I'm hoping I still have a few good buprestid moments to come, and that at least the odd young person has a few of their own from time to time as well.

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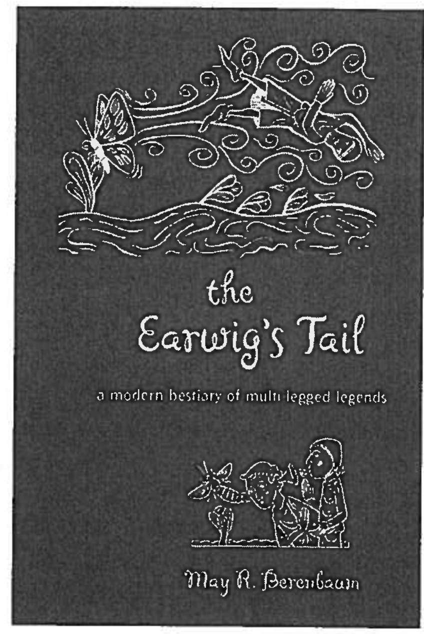
John Acorn lectures at the University of Alberta. He is an entomologist, broadcaster, and writer, and is the author of fifteen books, as well as the host of two television series.

What is It? answer.

This is a photograph of a larval case of an undescribed new species of moth in the genus *Hyposmocoma* (Cosmopterigidae) from Limahuli Gardens, Kaua'i, Hawaii. The moth creates a tubular case that is further covered in a thin layer that resembles a patch of lichen from the outside. We call this newly discovered case type the "jellyfish" case type. *Hyposmocoma* is known for their unusual life-history strategies, as larvae of some species are known to be amphibious, while others are carnivorous and feed on snails.

This photo was submitted by Akito Y. Kawahara and Daniel Rubinoff, Department of Plant and Environmental Protection Sciences, University of Hawai'i, Manoa, Honolulu, HI 96822, ak43@hawaii.edu.

If you have a color photograph of an insect, insect part, or entomological apparatus that you would like to submit for the "What is it?" feature, please e-mail a 300-dpi TIFF and a description of the image to the editor at cdarwin@aol.com.



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