



Nature Guide Training

<http://www.natureguidetraining.com>
lee@natureguidetraining.com
+27 (0)73 468 9267



Tracking in the micro-world

Written by:
Lee Gutteridge

In this first article on the insect and other invertebrate life of the Hoedspruit area, we are going to look into some of the incredible signs and interactions between these creatures which I describe in my book, *The Invertebrates of Southern Africa & their Tracks and Signs*.

“Tracking insects” is a concept which is very alien to most people, pretty crazy really, until they try it. I have found that seeing why things look the way they do in nature can reveal a lot about the denizens of the bush and how their lives interact at a near-microscopic level.

I am, first and foremost, an animal tracker, but I have found over the years that this does not need to be boxed in by traditional understanding. I decided some years ago to scale down my tracking, bring it into the micro-world, and learn to apply my art anywhere I may happen to be, irrespective of the presence of big game species. Insects are simply everywhere!

Invertebrates, creatures without spines, became a source of thousands of tiny subtle signs and images in nature for me. A wealth of mysterious information appeared, just waiting to be interpreted like an undiscovered ancient language, which we all can see, but very few of us could read. We needed a “Rosetta Stone”, language instructor, a key, so I started to slowly develop something to help us all gain access to this secret world. I began by basing my initial observations on the amazing pioneering documentation by Louis Liebenberg, as well as incorporating some of the quirkily amazing intricacies of Charley Eiseman’s North American works on this self-same subject. After four and a half years of

searching the bush for tiny, and often beautiful clues, I felt like I had at least a small foundation to begin the process, and a book was published.

Here is a story about one of the wondrous things that occurs around us every day:

Along young soft branches of the scrubby Mopani trees, which are very common in the Hoedspruit area we may encounter (if we are observant enough) tiny white balls of wax. This is, in fact, the home of a female wax scale insect. Let us follow her life up until this point...



She started life as an egg, under the protective wax skirt of her mother less than a year ago, and here, after a short incubation, she hatched. She was part of a large brood of maybe thirty siblings, and on some unknown cue, they left mother’s apron-strings and protection behind and struck out as a gang into the world. The world, as it was to her, was a small, shooting branch of a Mopani tree and she was

destined live out her entire life-cycle on this single branch. That branch was an entire world for her.

The siblings, all wonderfully tiny, flower-like beings with a beautiful white waxy covering, are known as "crawlers". And this they duly do until they find a suitable leaf. Here, they arrange themselves along the major veins of the leaf in perfect rank and file. They then insert their sharp proboscis (mouthparts) into this source of nutrition.



Our female, now that she has begun to feed, has time to consider other aspects of her survival. Protection is important to such tiny creatures. Danger from gleaning birds and other predatory insects is always tangible. Being white in colour, and living on a green leaf, camouflage is out of the question. So what other options are there? How about "hiring" a bodyguard? These tiny young insects have, over the millennia, developed not only a way to hire, but also a way to interview and pay their candidates!

As the young crawler feeds, she selectively extracts and utilizes the more nitrogen-rich material which she sucks from the plants. As a by-product of this feeding, much sugary material is also obtained. In fact, much more than she needs. She begins, once saturated, to eject this sugary bait, and it scatters and falls like a tiny rainstorm to the ground below her leaf. Much of this sugar falls to the ground without notice, but eventually an ant, with its super-senses fully alert, notices this tiny sugary treat. As our crawler's siblings join the sport, showering the ground with little drops, more and more ants enter the fray. They wonder where this amazing treat comes from and begin a concerted upward search. They climb the stems of all nearby plants, almost frenzied in their urgency. This sugar, or "honeydew" is a fuel-food resource which they cannot resist.

Eventually, one of the scouting ants climbs up into the tree, finds our crawler, and after a tense initial few seconds, where she could end up as a meal in the body-crushing mandibles of this terrifyingly large predator, the ant samples some of the fluids oozing from her body. It slowly relaxes, and suddenly protectively and gently, it moves around her. It scouts through its compound alien-like-eyes, looking for any potential threat to this wonderful resource it has now found, and is prepared to protect with its life.

Interviewed, hired, and paid in honeydew, this ant-bodyguard and many others like it will protect this "herd" of crawlers like so many tiny sheep. And, as with human shepherds, when the "grazing" loses quality, the flock must be moved. In the case of our crawler, when the fluids of the now severely damaged Mopani leaf start to slow, her ant-bodyguard will tenderly collect her in its powerful mandibles and, along with the rest of the shepherds, move her and her siblings to another leaf to "graze".



Once she begins to mature, she slowly moves back down the leaf to the wooden stem of the Mopani tree. She needs to find a permanent anchor point upon which she can wait, sinking her proboscis, or piercing mouthpart deep into the stem, drawing nutrients from the branch, and awaiting the arrival of a sexually mature male – a tiny winged creature, who will father her brood of eggs during a brief visit to copulate.

This was just one short story about the life of but a tiny creature in the bush, which I hope you found interesting. To me, it is fascinatingly similar to what we consider ancient human activity. The herding of our flocks has taken place for thousands of years...but the insects have been doing this for millions!