

INTRODUCTION



They creep, they crawl, they fly, they slime. They chew, suck, nibble, and devour . . . and they never give up.

We plant our gardens lovingly and laboriously, anticipating the pleasure and payoff in flowers and fresh vegetables. Then one day we go outside and the garden looks as if Sherman's troops had marched through it. Armies of bugs have chewed the little green poppy plants, the lovely lettuce is wilted, and the rosebuds are obscured by a teeming mass of frothy white trespassers. It's war.

We go into the kitchen early in the morning to start making breakfast. It takes a few minutes before we suddenly realize that we are sharing our home with hundreds—no, thousands!—of brazen ants, who are behaving as if our honey jar were their gift from the gods. It's war.

The dog does nothing but itch and scratch. He has lost most of the hair off the top of his rear, and the last time we dusted him with flea powder, he seemed to be having some kind of a fit. It's war.

Our second grader has been sent home from school with lice for the third time this year. Now we have to treat everyone in the family, vacuum like crazy, and do twenty-four loads of laundry. It's war.

Trying to protect our territory from persistent alien invaders can't help but stir up the primal juices. It's the good guys against the bad and we know which we are. We have the moral righteousness of the attacked on

our side, while those tiny trespassers deserve all the fury we can heap on them.

Off we go to any number of home improvement centers, nurseries, or hardware stores. We walk up and down the aisles and study the vast array of poisons available to us. Notice the slightly sickening, noxious smell that emanates from the shelves. (Can this be good for the employees?) We squint at the labels with their chemical mumbo jumbo and their warnings. Remember that article we just read about the “end of nature.” Wish we knew of a better way to take care of this.

INCREDIBLE INSECTS

Insects have been on this planet since before the first cockroach appeared 300 million years ago. Not only did they precede us by more than 200 million years, but termites had air-conditioning before we had houses, and wasps could paralyze their prey before we had anesthesia. Lowly, small, primitive, thoughtless, and short-lived though they may be, insects are nevertheless the most successful creatures on earth.

There may be as many as 10 million different species, of which perhaps a million have been described. To add to the amazing variety and complexity of life forms they present, most of these insects change their shape during development, from egg to larva to pupa to adult. “The earth has spawned such a diversity of remarkable creatures that I sometimes wonder why we do not all live in a state of perpetual awe and astonishment,” Howard Ensign Evans once wrote.

We do not, however, hold bugs in awe. Even though they can outwork us, outlift us, outjump us, and outfly us, we despise more than respect them. They seem to us to live only to reproduce and to eat or be eaten. They are so utterly different from us, they seem aliens in our world. Insects have no lungs, yet they must have oxygen to live. Some have no ears, although their sensitivity to vibrations is acute. Others have no noses but can smell incredibly well. They may have ears below their knees, gills under their abdomens, or breathing tubes on their sides. They learn nothing from their parents but are born knowing everything they need to know. They carry their skeleton on the outside of their body, their blood is seldom red, and they walk on myriad legs. Is it any wonder that we

have problems with insects? We regard them alternately with loathing and fear, fascination and disgust. We are woefully ignorant about them and most often end up killing the ones we need, while failing to control the pestiferous ones.

Insects exist even in the Antarctic, where temperatures drop to 85° below zero. Collections made from airplanes reveal that a column of air one mile square probably contains 25,000 insects. An acre of typical English pasture may contain over a billion arthropods (insects, spiders, mites, centipedes, etc.). We make calculations about the vast incomprehensible distances of space, but right here on earth there may be a billion billion insects. Try to write out that number.

Until the middle of the seventeenth century, most people in the Western world believed that insects came into existence through spontaneous generation. They were generally thought to be “bred by corruption” or from the dew on the leaves. Humans often turned for help to the Church, which regularly excommunicated insects for their misdeeds. Yet little progress was made toward controlling pests; even the most noxious ones, such as fleas, rats, and lice, were tolerated as an inevitable part of life.

Insects have always been our prime competitors on this planet. They eat our food, our clothing, and our houses. They even feed on us and transmit terrible diseases. A state of complacency regarding them has never been in our best interests. However, once we decided to get tough on pests, we really went overboard. We picked methods that harmed us as much as them.

We embarked on an indiscriminate, all-out war against insects. “Better living through chemistry” tried to teach us that all bugs are bad bugs and that the only good bug is a dead bug. But less than 1 percent of all insects are pests. Most are extremely beneficial. Without insects, animals like fish, reptiles, birds, and certain mammals would have nothing to eat and would starve. Furthermore, as the entomologist E. O. Wilson has pointed out, without the recycling of organic matter that insects carry out, dead vegetation would pile up and dry out all over the world, killing off plants and animals.

It may seem odd to talk about how necessary insects are in a book on



tiny game hunting (and trapping and killing and repelling), but part of the problem with our pest control tactics up until now has been that we tried to annihilate them so utterly that we began to take out the birds, the fish, the bees, and a lot more along with the pests. If we keep in mind what an important role some insects and spiders play, we can control them more successfully.

THE TOXIC TIDE

Before we came up with the “magic bullet” of chemical pesticides, people were much more inventive about dealing with pests. Then the idea caught on that we could take care of the whole problem with a few squirts or sprays, and we got lazy. We thought if we dusted the dog, we wouldn’t have to vacuum; if we put up a no-pest strip, we wouldn’t have to repair the screen door; if we had the house fumigated, we would never again have to look for termites. We opted for the neutron bomb of pesticides and thought we were winning the war.

We read that American farmers will apply 24 million tons of fertilizer and 1 billion pounds of pesticides on our land this year. How much of this will end up in our water, our air, our food, our body fat and breast milk? Indeed, the U.S. Geological Survey has reported that every sample of stream water taken from a developed watershed was found to have pesticide contaminants. And the EPA reports that pesticides are now a major threat to groundwater.

Although TV commercials make using pesticides look perfectly safe, safety is one of the great fallacies surrounding these chemicals. The EPA says that each year millions of people suffer side effects such as nausea, dizziness, and headaches from pesticides. These are just the short-term effects. More than 80 percent of the most commonly used pesticides today have been classified as carcinogenic by the National Academy of Science. At the same time, cancer rates are increasing dramatically every year (breast cancer by 2 percent, children’s cancers by 1 percent). Pesticides have also been implicated in causing learning disabilities and hyper-aggression in children. What are we doing to ourselves?

Not only are we using more pesticides, we are making them more dangerous. Mixing two pesticides together greatly magnifies their toxicity.

For instance, in 1996, *Science* reported that a mixture of endosulfan and dieldrin, two organochlorides, produced an estrogenic effect 1,600 times more potent than each chemical alone. Most fruits and vegetables are sprayed with as many as five chemicals.

The blind application of pesticides amounts to an admission that insects are smarter than we are. We believe, however, that human beings are cleverer than insects. Practicing hazardous chemical warfare against pests should never take the place of the three Os of tiny game hunting: observe, outwit, and outlast.

Doing battle with pests using the tactics of tiny game hunting is actually more gratifying than spraying with toxic chemicals. You will derive great satisfaction from trapping pests without guilt, discouraging them without peril, and keeping them away by understanding their particular habits. There is only one hard-and-fast rule for the tiny game hunter: Don't use any weapon to kill pests that could possibly kill you too.

