Those Little Things that Still Rule the World

by Carol Henning

Arriving early in Glasgow for a hiking holiday in Scotland, I decided to check out a natural history museum. I was attracted to the “Hall of Wee Beasties.” This featured bees and butterflies, among the most popular and charismatic of insects, along with their colleagues. Dr. Jonas Salk, of polio vaccine fame, observed that: “If all the insects were to disappear from the earth, within 50 years all life on Earth would end. If all human beings disappeared from the earth, within 50 years all forms of life would flourish.” It’s something to think about as one reaches for a fly swatter.

Since I have become a gardener, I have grown more aware of the services insects provide as well as the harm they can do. Our planet’s real diversity “lies mostly beneath our regard,” writes Elizabeth Kolbert in “A Little-Known Planet.” (The New Yorker, March 20, 2023). The largest family of beetles, commonly known as weevils, contains sixty thousand described species. It is estimated that in one family of parasitic wasps, there are nearly one hundred thousand species. There are at least two billion insect species. Contrast this with roughly sixty-five hundred species of mammals and eleven thousand species of birds.

The wee beasties deserve our notice. As Kolbert points out: “In keeping with their variety, insects play a vital role in virtually every terrestrial ecosystem.” Close to three-quarters of the world’s flowering plants depend on insects for pollination. “Insects are also crucial seed dispensers; many plants stud their seeds with tiny treats to entice ants to carry them off. And they’re great decomposers. (When a person dies, blowflies arrive on the scene within minutes; in warm weather, blowfly maggots can eat through most of a corpse within a week.)” Remember the line from a Shakespeare play that goes something like this? “He’s at supper—not where he eats but where he is eaten.” Often, though, the eater becomes the eaten as “legions of other creatures depend on insects for food.” These include bats, hedgehogs, shrews, most amphibians, plus many reptiles, freshwater fish, and birds. My mallard duck, Gertrude, prowled ceaselessly in ponds and in the grass, for insects. Kolbert credits insects for being “the solder that holds food chains together.”

Edmund O. Wilson, (1929-2021) was the world’s leading authority on ants. As a boy, he liked to ramble in the fields near his home in Alabama. He loved to look at wildlife. He especially liked birds and wanted to do ornithological fieldwork, but he was partially blinded in a fishing accident when he was seven years old. The damage to his depth perception made him switch his interest in ornifhology to one in entomology. He said: “Everyone has a bug period. The difference is I never grew out of mine.” In 1979, he was awarded a Pulitzer Prize. His research on ants and his writing about them were groundbreaking. Here is an example: How does an ant know another ant is dead? Ants communicate by smell and taste so Wilson got hold of a number of chemicals in their pure forms. He tried one after the other. When he daubed a strong, healthy ant with oleac acid, other ants picked it up and threw it on a pile of dead ants. Ant colonies usually have an ant cemetery. No doubt the live, healthy ant did not appreciate this treatment, and quickly rose from the dead.

“Nature holds the key to an aesthetic, intellectual, cognitive and even spiritual satisfaction,” said Wilson. Those of us who spend time in Griffith Park or other places where nature is preserved and protected—at least in some areas—know this to be true. Here is a description of a brief sojourn in Descanso Gardens by Diana Nightingale, a camellia horticulturist: “A soft buzz catches your attention as you walk one of the paths, and you follow it to the star-like flowers of native purple nightshade…A queen bumble bee is zooming from one flower

to another, grasping it with her feet and swinging upside down as she gathers the pollen and moves it to her back legs. As she reaches her holding capacity, she suddenly zips away from the site to an abandoned burrow inside which she is building her nest….Nearby, a metallic green sweat bee lands on the flower of a brittlebush and [shuffles] pollen toward her back legs. Meanwhile, a leafcutter bee swings close by…collecting her stock of pollen under her abdomen….the green sweat bee returns to her nest that she dug into the warm open soil between the flowering shrubs. The leafcutter bee returns to a small tunnel in wood, created by a beetle just last year, that she has since lined with small pieces of leaves. Nearby, a female flower fly hovers above a yarrow flower for a moment, her wings whirring so quickly you can feel light air currents as you move close. She lands and takes a sip of nectar….She will lay an egg on a nearby flower, hatching into a small green larva that feeds on a local colony of sap-sucking aphids. Perched elegantly on the stem of a sage…is a very fuzzy yellow and black fly. It is commonly known as a bumblebee robberfly as it mimics the colors of its namesake to protect itself against predators. Its large, compound eyes allow it to watch for honey bees and wasps, which it will catch in midair with its robust legs." Also discussed are a marine blue butterfly, a mud dauber wasp, a long-jawed orb weaver (spider), an orange sulphur butterfly, a speckled gray and tan praying mantis, a velvet ant, a monarch caterpillar, a black and red milkweed bug and a cicada.

The little praying mantis mentioned in Nightengale's description belongs, she explains, in the group of minor praying mantids. Instead of lying in wait and ambushing their prey like their larger cousins do, these little mantids run after them, grasping them in their front legs. I find mantids to be among the most exquisitely designed insects. I also enjoy watching spiders, arachnids with two-part bodies instead of the three-segment insect bodies. One of my Sierra Club friends lets spiders spin their webs in her bathroom. She then invites visitors to her home to meet the spiders and admire their web designs. (After all, spiders were web masters long before humans were.)

Does Ms. Nightingale's description make you want to get over to Griffith Park and find a quiet place to stroll or sit and observe nature's wonderful wee beasties? Perhaps you shouldn't wait too long. Signs of an insect apocalypse may have been first seen by members of the Krefeld Entomological Society in western Germany in 2013. They returned to sites they had first sampled in 1989, and they found that the total mass of insects they caught were just a fraction of the number they had caught in 1989. (Kolbert, The New Yorker, op. cit.). In the fall of 2019, a session called "Insect Decline in the Anthropocene" for the annual meeting of the Entomological Society of America included reports of declining butterfly counts in California's Central Valley and in the Sierra Nevada. It seemed that the heterogeneity of the data coming in suggested that insects were suffering from many stressors: lights, pesticides, loss of habitat, climate change, pollution, exotic species and the industrialization of agriculture. (The New Yorker, op. cit.)

E. O. Wilson offered this overview: "We have created a Star Wars civilization with Stone Age emotions, medieval institutions, and godlike technology. We thrash about. We are terribly confused by the mere fact of our existence and a danger to ourselves and the rest of life."

We can try harder to understand and care for this "little known planet." We can start by putting away the fly swatters and bug spray. We can try to keep counters and floors free of crumbs. We can put stoppers in drains overnight to stop roaches' entry. Bay leaves, cucumbers, garlic and catnip repel roaches. We can try putting cinnamon sticks, coffee grounds, chili pepper, paprika, cloves or dried peppermint leaves near openings where ants are coming in. We can also squeeze the juice of a lemon at the entry spot and leave the peel there. If ants invite themselves to our picnic, we know what to do. Provide tiny sandwiches and drinks for them. Maybe they'll leave our food alone.