Dear Reader,

Today felt like it might be a good-bye to summer. I walked through patches of prairie and the edges of wood-land at Fort Worth Nature Center and Refuge, on the Oak Motte trail, on a sunny day with a broad, cloudless blue sky. I started walking about 11:30am, and instead of midsummer's relentless heat it was simply warm, and a breeze helped keep the warmth in check. The "official" end of summer is still twelve days away.

Grasshoppers were everywhere, and right away I spotted one and then another spotted whiptail on the trail through the prairie. These lizards, with their dark bodies and pale green stripes, ran ahead a little, stopped to look back, and then I lost them in the grasses, shadows, and thatch at the side of the trail. They prefer sunny days in the 90-degree range, but I'm sure they were catching and eating plenty of insects today.

That big prairie near the Hardwicke Interpretive Center, downslope where the limestone of the ridge gives way to sandy soil, is a gift woven from the efforts of nature along with the refuge staff. The land knows what to do when the conditions are right, and humans help create those conditions. This was true when Native Americans



A two-striped mermiria grasshopper

were the dominant culture, and now it is true with the nature center as the steward of the prairie. It took much work to remove a thicket of sumac that threatened to take it over, years ago. It takes careful and knowledgeable effort to have periodic prescribed fires that are like vitamins for the native plants.

Along with many flowering plants, native grasses like Indiangrass, switchgrass, and big bluestem grow there. Today in places





Switchgrass towering over me

pollinate crops. Entomologists are documenting insect declines in many places. In lots of places, we simply don't know, because there are not enough researchers and not enough funding to go around. We rock along, spreading invasive plants and inventing new chemicals, with barely any idea what we might be hurting in the process. And so, I was very glad for the grasshoppers, the dragonflies, and the other insects I saw on this walk.

I was also happy to see a dung beetle with a nicely rounded ball of dung that it kept trying to roll uphill. The beetle

some of these towered over my head. And all through it, grasshoppers feasted on what must seem to them to be an endless outpouring of love and nourishment from the grassland.

Along the edge of a bison pasture, an eastern phoebe flew from the fence as I got closer, but periodically dropped down to snatch up an insect. The bird then looked around (keeping an eye on me and looking for insects) and kept grabbing bugs as it moved away from me.

It was another example of insects feeding wildlife. In his book, *In Search of Nature*, biologist E.O. Wilson wrote a short chapter called "The Little Things That Run the World." He talked about invertebrates, from insects, spiders, and mites down to microscopic organisms like tardigrades or copepods, and how the life of the world depends on them. They provide food for other animals, pollinate the plants that we depend on, and they break down the tissues of dead things, returning nutrients to the soil. They vastly outnumber us; there are more kinds and also a greater bulk of them than all the animals with backbones. As a result, there is nothing that could take their place if they disappeared.

And around the world, there are worries about insects. Stories in the press tell about our seeing fewer insects smashed on our windshields on road trips, and they talk of neonicotinoid pesticides killing bees that



An American bird grasshopper



would position itself below its treasure and back up, using its back legs to roll the ball. Just when things were looking good, the ball of dung would hit an irregularity and tumble down the hill again. I wished good luck to the beetle and walked on.

Assuming that the beetle gets it to a workable spot, it will bury the ball and a pair of the beetles will mate and lay eggs within it. Upon hatching, the larvae will consume this savory packet of food as they grow and develop. And from the perspective of the rest of the world, these beetles have performed a great service as they bury animal droppings and mix nutrients into the soil for plants to use.

Some of the grasshoppers were of the band-winged variety, and they tend to be very well camouflaged on the sandy brown trail. When I walked close to one, it launched itself into the air and flew on yellow and black wings to a nearby spot. This



The dung beetle with its burden

was a little startling, suddenly seeing those colors. Not only that, the wings made a rattling or snapping sound



A band-winged grasshopper





The view from the bench

called "crepitation" as the grasshopper flew. When it lands, the wings are folded and covered with that camouflaged outer wing so that the insect seems to disappear. I'm wondering if all this doesn't leave a predator a little confused and unable to find its prey.

I walked through woodlands that opened onto prairies or savannahs where mesquite, juniper, or even pecan trees dotted the grassland. And then I came to a short side trail through the trees leading to a bench where I sat still and then wrote for a while. There was little bluestem and Indiangrass that stretched back to a line of trees some distance away. My thermometer said it was 83.3°F at 12:20pm. I wrote that "summer is slipping away."

I got in a good position and closed my eyes, breathing a little deeper and slower. Muscles relaxed and I spent a couple of minutes that way. When I opened my eyes again, I noticed lots of things. The tops of grasses danced in the light breeze, and I saw the branches of a big juniper in the distance sway in a stronger breeze. An orange fritillary butterfly fluttered across the prairie, the moving air pushing it along faster than a person could run. And it was quiet, mostly. Sometimes an airplane passed nearby, but otherwise it was just breezes and birds. Relaxing on a sunny, cloudless day in a patch of grassland is a wonderful experience.

A little further down the trail there is a place I am always drawn to, a gentle rise with a huge live oak tree at the top. Different grasses and plants grow at each elevation, maybe because of changes in soil or drainage. Below one kind of grass there is an area with lots of yucca, and little bluestem grows behind that. Yucca is a







Pale-leaf yuccas

beautiful plant, but walking through a patch of it without being stuck by one of those long, sharp leaves can be challenging.

This one is called pale-leaf yucca, and it has long, dagger-shaped leaves that come to a very hard, sharp point. Often those leaves are a pale bluegreen and they grow from a central point in a shape called a "rosette." In spring, the plant sends up a tall stalk which then produces many (up to 100) pale yellowish-white flowers.



Summer may stick around for a while, even past its official end, and that's OK. I'm just thankful for this day with its moderate sunshine and breeze, its tall prairie grasses, and all the insects that jump and fly and feed birds and lizards.

Michael



If you would like to know more about the Fort Worth Nature Center & Refuge, visit

https://fwnaturecenter.org/

and

https:// naturecenterfriends.org/

The big prairie

Letters From the Woods is written by Michael Smith, a naturalist, writer, and retired psychological associate. The letters literally come from the woods, or sometimes from prairies or other places in nature. When I'm out somewhere, I write about it in my journal, and that becomes a letter to you. It is a free pdf download from http://livesinnature.com/letters/ (the page titled "Letters to You")

If you enjoy these letters, I hope you will support my work (my writing and also the talks I give to adults and children about nature and mindfulness) with a donation in whatever amount seems right. You can do that at https://paypal.me/MSmithLPA.

You might be interested in some of the walks I lead, for mindfulness in nature and/or nature study. See https://livesinnature.com/activities-in-nature/ (the page titled "Activities in Nature")