My Life With Bees

My first encounter with a bee was when I was probably 4 or 5 years old, growing up in Syracuse, New York. My family was getting ready to go out for the day, and my mother had gotten me all cleaned up, in a nice dress and polished shoes. I was supposed to wait—and stay clean—while the rest of the family finished getting ready. So, I went outside and found a bumble bee in the flowerbed.

I figured that I could watch it and still stay clean. It seemed so busy and so unconcerned with me that I just had to touch it.

Ouch!

That was one of my first lessons about respecting nature. But I remember watching the bee in the flowers as much as I remember the sting.

Today, bees—including bumble bees—are a big part of my life. I direct a team of bee experts at the ARS Bee Biology and Systematics Laboratory in, appropriately enough, "The Beehive State" of Utah. We're located at the Utah State University campus in Logan, and we specialize in determining how to "domesticate," or manage, wild bees, in somewhat the same way that European honey bees are managed. Our goal is for growers to have the pollinator workforce they need to efficiently and effectively pollinate fruits, vegetables, nuts, and other crops.

To accomplish this, we need to know much more about wild bees. We're investigating many aspects of their everyday lives. In my own laboratory, research focuses on bee diseases, specifically, chalkbrood.

This disease kills many kinds of bees, including alfalfa leafcutting bees, a wild species that is being used successfully to pollinate alfalfa.

The fungi that cause chalkbrood are very interesting. If you look at these fungi under a microscope, you can see that they form beautiful balls of tightly packed spores—the minuscule structures that enable the fungi to spread.

The life of the chalkbrood fungus is intricately linked to the life of the bees it attacks. It is through the study of this relationship between the bee and its mortal enemy that we're finding new ways to control this microbe.

We spend what may seem like an inordinate amount of time peering into a microscope to study the fungus's spores. But our work also takes us outdoors, of course. We investigate levels of chalkbrood infection in bees, and we test different means of controlling the disease.

Other researchers at the bee laboratory also put in long hours outdoors. Some lead investigations that require them to venture to remote, wild places, discovering new bees, rediscovering ones thought extinct, and documenting which bees—or other insects—pollinate what flowers. Without the help of pollen-carrying insects, some flowering plants might be lost from these landscapes forever.

We call these explorations "faunal surveys of insect pollinators." They're conducted on behalf of people who look after parks, forests, and other wildlands—and even for regional governments concerned about protecting pollinators that might otherwise be displaced by urbanization.

The surveys also help us find bees that might be put to work pollinating crop plants that need their help.

We're building a computerized database to document these surveys. So far, we have more than 1 million entries—wild, native, and nonnative bees and other busy pollinators of 6 ecosystems across the country. With each new expedition, we'll add more pollinators.

Wild bees are everywhere, running the world of the flowering plants around us. But many bee species have been overlooked. We're gradually changing that with research we hope will help bees, people, and plants prosper.

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