

If identifying unusual insects and plant diseases were a sport, Matt Bertone would rank up there with Wolfpack basketball great David Thompson — and he has the trophy case to prove it.



THE BUG MAN OF RALEIGH

Don't know whether a creepy-crawly is a friend or foe?
Or what's ailing your azaleas? Matt Bertone and
his team probably have the answers.

written by ELEANOR SPICER RICE / *photography by* JOSHUA STEADMAN





DEEP WITHIN THE RECESSES OF North Carolina State University's Gardner Hall, in the belly of its labyrinthine basement, a giant has in his charge some of our state's smallest residents. Dr. Matt Bertone is the director of NC State's Plant Disease and Insect Clinic. He may be 6-foot-4, but he can gingerly manipulate mites smaller than grains of salt under a microscope.

For more than 70 years, the clinic has served as a repository for our marvels and our fears as it works to identify plant diseases and insects. Farmers and university Extension agents bring in curious plant clippings. Gardeners drop off Tupperware containers holding half-eaten leaves and chubby caterpillars. The rest of us email photographs and fill jars with many-legged creatures, bits of plants, pocket lint, objects of wonder. We deposit these things at the clinic, and, for a small fee, experts tell us what they are, and what to do about them.

Bertone takes the creatures with all the legs, and some — like larval insects and worms — that have no legs at all. "Insects and spiders and all types of creepy-crawlies," he says. "That's my specialty."

The clinic's team, including three full-time pathologists, identifies around 3,000 samples a year. Bertone himself identifies more than 1,000 annually, either officially through the clinic or

unofficially through the texts and emails that he gets from friends and acquaintances. He also helps train others, like Extension agents, to know what to look for — and what to do when they find something.

NORTH CAROLINA IS HUMID AND WARM, RELATIVELY speaking, with mild winters and hot summers. Life thrives in abundance here, where we let it, meaning that we have some of the greatest plant and animal diversity on the planet. Wildflowers like blue stars, jack-in-the-pulpit, and lady slippers bloom without our help. A rainbow of cicadas and katydids rattle our trees. May beetles, June bugs, and tiger beetles plink against our windows.

As a child in Pennsylvania, Bertone searched for life around him, read about it, and dreamed of finding more. "I didn't have the diversity that I can see down here in North Carolina, which is one of the reasons that I enjoy living here," he says. "We've got a lot of really interesting species."

Native North Carolinians may be used to the plenitude, Bertone says, but he sometimes gets calls from newcomers who aren't as excited as he was to find themselves amid a riot of living things.

"A lot of people who move here, especially from up North, call me. They come here and say, *What's going on? There are so many bugs!* And I just say, *Well, that's North Carolina.*"

At his workstation at NC State, Bertone is surrounded by the tools of his trade: specimens, books, cameras, microscopes, and drawings of bugs from young citizen scientists across the state.



Specimens collected by Bertone and his colleagues range from sick plants to unique insects destined for the NC State Insect Museum. Have something that you want to identify? Find out how at pdic.ces.ncsu.edu/how-to-submit.

This abundance can make for some interesting identifications for Bertone, who often publishes scientific papers describing new species found from samples brought to the clinic. “A recent paper describes a new mite species in North Carolina that came into the clinic on a sample of hazelnut leaves.

Sometimes, he has a hard time letting go of his specimens. So he keeps some of them as pets.

“I have a black widow on my desk right now that came in on some tobacco,” he says. “When people take tours of the lab, the students love seeing dangerous spiders.”

Many young insects can be difficult to identify. Some, like maggots and beetle grubs, look like little blobs, and others resemble their kissing cousins until they grow up. To uncover a species’ identity, Bertone sometimes acts as a nursemaid, gently rearing them to adulthood.

He recently cared for a creature that was found preying on catalpa worms in Johnston County, feeding it other insects until it became an adult. “Then, I could confirm it was a new species in North Carolina,” he says. “I posted it on Twitter, and a stink bug expert commented. We got in touch and collaborated on finding new records of this stink bug in different states.”

If you take your time and pay attention, the world reveals secrets that have been there all along.

It’s not unusual for Bertone to find and track species that are new to North Carolina through the samples that he receives. Sometimes, these species are pests and need to be controlled. Other times, they’re just hanging out. Or maybe they’ve always been here, but nobody’s noticed them yet.

Bertone believes that if you take your time and pay attention, the world reveals secrets that have been there all along, waiting for someone to look for them. That’s especially true when you’re living among North Carolina’s natural abundance.

“A lot of people ask me, as an entomologist, if I travel to a lot of exotic locations,” he says. “Honestly, I never get bored here.”

That’s because Bertone knows these secrets. He’s always watching and listening, whether in the belly of a university basement or in his own house. “Even in my backyard, I can find things that are rarely seen,” he says. “I don’t have to go very far.” **Os**

Eleanor Spicer Rice is an entomologist and author. Her latest book is Unseen Jungle: The Microbes That Secretly Control Our World.

