



SMALL BUT ALARMING

Written by Bruce Ingram

Ticks and mosquitoes present the most serious—and most overlooked—dangers to North Carolina outdoorsmen



FOR FELLOW OUTDOORS FOLK, I offer two examples of outdoors-related animal fears that make no sense. Recently, I had someone tell me that he has a friend who captured a picture of a gray wolf on a trail camera. The individual did not believe me when I told him that that was highly unlikely if not impossible for a wild gray wolf to be living in our region and that the picture was more than likely of just a dog.

Several months earlier while speaking to a sportsman group, I had many individuals claim to have seen mountain lions over the past few decades or had close friends who knew someone who had, and what were wildlife officials going to do about the imminent danger to good citizens. The most implausible tale told involved a cougar striking down a poor, innocent pony just outside of a major city.

This irrational fear of wolves, lions, and tigers (yes, I'm being just a little sarcastic on that last one) in our midst is not what we should be worried about. Indeed, two very dangerous animals—ticks and mosquitoes—dwell throughout North Carolina and their bites can prove at the very least debilitating and at the worst fatal. And anyone who hunts, fishes, camps, hikes or enjoys the outdoors in any kind of way or even strolls into his or her backyard is at risk said Brad Gunn, a biologist with the N.C. Wildlife Resources Commission.

“Ticks and mosquitoes are the two most overlooked dangers in North Carolina’s outdoors,” he said. “One of the many dangerous things about Lyme disease is that many doctors still misdiagnose what is wrong with someone.

“Also of concern is that a long time can pass between the time someone receives a tick bite and when the disease is correctly diagnosed. It’s very important to go to a doctor that knows how to recognize the symptoms because not everyone has the classic bull’s-eye rash that the disease is most associated with.”

Unfortunately, I all too well know the dangers of ticks and the lack of a bull’s-eye rash, as I was diagnosed with Lyme disease (LD) in July 2012. In mid-April I found an attached deer tick (the species that causes this affliction, also known



American dog tick

as the blacklegged tick, *Ixodes scapularis*). By May I was suffering from fatigue, and by June my toes had begun tingling—an affliction known as neuropathy and a possible symptom of LD.

In July, I contacted my family physician, spoke of my fear about having Lyme disease, and the doctor ran a blood test. A week later the results came back positive, and I began a 30-day regimen of taking doxycycline twice daily—interestingly, the same antibiotic often prescribed when someone contracts the bubonic plague. If anything hammered home to me the seriousness of LD, it was the fact that I was taking medicine known for its potency in combatting the Black Death.

Fatigue and neuropathy are just two of the early symptoms of Lyme disease. Others include fever, chills, body aches and headaches, all which I did not experience. Later signs include joint pain (especially in the knees), meningitis (inflammation of brain membranes) and Bell’s palsy (temporary paralysis



An American dog tick on a blade of grass. This engorged female lone star tick (right) is a great example of the phrase “tight as a tick.” A lone star tick is shown to scale on a fingertip. Bottom, the mouth of an American dog tick.

of one side of the face). Severe fatigue, eye inflammation, liver inflammation and heart problems such as an irregular beat can also occur, even months after an individual believes the disease has gone away.

Lyme disease is not the only ailment that ticks can inflict. When I was in my early 20s, I worked at an Easter Seal camp for mentally and physically challenged children. One of the boys in my cabin who suffered from the former condition was a 9-year-old who had contracted Rocky Mountain Spotted Fever (RMSF) when he was 8. He had suffered through an extremely high fever that had left him permanently mentally challenged. So began my intense fear of ticks.

In North Carolina, two species carry this disease: the American dog tick (*Dermacentor variabilis*) and the brown dog tick (*Rhipicephalus sanguineus*). Possible early symptoms include fever, headache, abdominal pain, vomiting and muscle pain. Rashes sometimes occur but just like the LD bull’s-eye rash, they may never develop.

RMSF can be fatal, or in the case of my camper severely debilitating if not treated within the first few days. The little boy’s mother tearfully told me that she thought her son had merely the flu and had treated him with bed rest and aspirin. As is true generally with tick-related illnesses, doctors often use doxycycline to treat RMSF.

The Lone Star tick (*Amblyomma americanum*) can cause a variety of illnesses, among

them ehrlichiosis. Fever, headaches, chills, fatigue, muscle pain, nausea, vomiting, diarrhea, red eye and occasionally rashes are among the symptoms. Ehrlichiosis can be fatal if not treated correctly and quickly. However, individuals who are treated early may rebound quickly.

The other major tick-borne plague that exists in this state is spotted fever and is caused by the Gulf Coast tick (*Amblyomma maculatum*) which fortunately dwells only along the coastline. Symptoms are very similar to RMSF.

The major mosquito-related plague that exists in North Carolina is the West Nile Virus (WNV). The good news is that North Carolina is not among the nation’s leaders in reported cases; the bad news is that this affliction is on the upsurge in the United States. WNV most often occurs in the summer and fall, but with our warmer weather nowadays, I occasionally see mosquitoes even in January and February. The disease is most often spread when humans are bitten by mosquitoes that have fed on infected birds. Only rarely is WNV spread through blood transfusions or organ transplants. It is a myth that WNV spreads through kissing or touching.

According to the Centers for Disease Control (CDC), about 80 percent of all people infected with WNV show no symptoms; and some 20 percent display fevers, nausea, vomiting, headaches, body aches, and sometimes swollen lymph glands with skin rashes on the chest, stomach and back. About one person in 150 develops severe symptoms such as high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis.

Again, according to the CDC, people over 50 are at most risk of developing severe symptoms from West Nile Virus, but, obviously, anyone who goes outdoors can contract the disease. If individuals develop symptoms such as severe headaches or confusion, they should visit their doctor immediately. In North Carolina in 2012, two deaths were attributed to WNV and six cases occurred. In contrast, Texas experienced 76 deaths.

Gunn offers some tips to help prevent bites.

“It’s very important to create barriers between you and the ticks and mosquitoes,”



**IT IS VERY IMPORTANT TO CREATE BARRIERS
BETWEEN YOU AND THE TICKS AND MOSQUITOES**

JAMES GATHANY

he said. “That means wearing boots and socks if you’re walking through tall grass. It also means wearing long pants, tucking your pants into your boots and wearing several layers of long-sleeve shirts.”

Allegra Lowitt, vice president of marketing for ThermaCELL Mosquito Repellent, suggests parents meticulously look over the bodies of their children and search for ticks crawling about or attached, then having spouses check each other. Every time my wife and I venture outdoors during the warm weather period, when we arrive home we check each other for ticks, wash our clothes and take showers. However, this degree of caution did not keep me from developing Lyme disease.

Many products designed to decrease our chances of becoming bitten by ticks and mosquitoes exist. Dave Larsen, vice president of marketing for Gamehide, says his company’s ElimiTick line can greatly lessen the possibility of people being bitten by ticks.

“We combined forces with Insect Shield, which created the proprietary long-lasting permethrin treatment which is designed to repel ticks, mosquitoes, chiggers and a number of other insects and is EPA approved,” he said. “We then applied that company’s technology to our clothing products and came up with our ElimiTick line.

“The result is that a natural repellent bonds to fabric fibers. Permethrin comes from an African chrysanthemum and basically causes ticks and mosquitoes to bail off from clothing. The compound lasts the life of the clothing garment, the standard being 70 washings.”

Jason Griffin is president of Insect Shield International, which is located in Greensboro. He explains the company’s mission.

“We focus, not only on helping protect individuals from being bitten by insects some of which can carry dangerous diseases, but also in helping companies protect their employees from insects,” Griffin said. “For example, we recently supplied clothing to a company that

was sending its employees to Africa where such mosquito-borne diseases as dengue fever and malaria are endemic.

“Until our proprietary, permethrin-based treatment technology came along some 10 years ago, clothing that had been treated with a mosquito repellent only worked for a few washings if that. For our product to have received EPA approval, we had to submit data that our clothing is effective in repelling mosquitoes and won’t harm the wearer.”

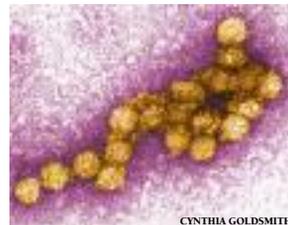
Griffin adds that a study done by the U.S. Army showed that permethrin treated uniforms could prevent 97.6 percent of insect bites and when used in conjunction with DEET was 99.9 percent effective.

“Equally as impressive as the mosquito study done by the Army is the one conducted by researchers at the University of North Carolina Gilling’s School of Global Public Health,” said Griffin. “Outdoor workers wearing Insect Shield treated clothes had 99 percent fewer tick attachments during work hours than workers wearing untreated uniforms.”

Griffin concludes by saying that since clothing treated with Insect Shield is scent-free, hunters and photographers especially should find it to their liking.

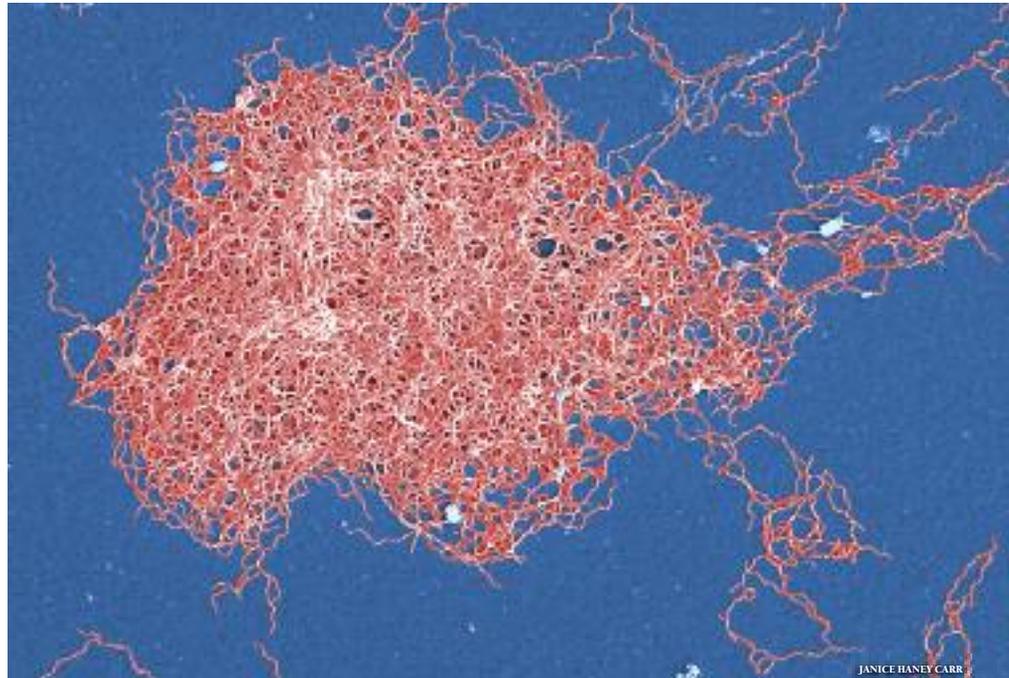
One of the best products I have ever used to repel mosquitoes is the ThermaCELL Mosquito Repellent. Basically, the product creates a 15x15 “no fly zone.” A butane cartridge powers the unit, heating a mat releasing allethrin, a synthetic duplication of a natural insect repellent. The mat lasts for four hours and the butane cartridge for 12.

Josh Silva, marketing manager for ThermaCELL, says that because the product



West Nile Virus
CYNTHIA GOLDSMITH

This bull's-eye rash appears in about 80 percent of Lyme disease patients. This digitally colored electron micrograph (right) shows a grouping of *Borrelia burgdorferi* bacteria that are responsible for causing Lyme disease.





Why Do Deer Ticks Stay Attached So Long?
See Nature's Ways, page 43.

is based on a natural insect repellent it does not spook game—a prime consideration for hunters. Quite frankly some of the insect repellents I have tried did, I believe, alarm deer, but the ThermaCELL does not from my experience.

Sawyer offers several products that ward off insects, among them Permethrin Premium Insect Repellent and Ultra 30 Liposome Controlled Release, a DEET product. During the early part of the bow season, I like to apply Ultra to put on the back of my neck and ears. Permethrin Premium is designed to kill ticks and repel mosquitoes.

The Tender Corporation/Adventure Medical Kits is another well-respected company in the bug wars with two of the best-known products being Ben's 30 Tick & Insect Repellent and Natrapel. Natrapel serves as a good option for protecting exposed spots while Ben's 30 is a sound choice for applying to foot apparel and clothing.

Finally, Rynoskin, a lightweight, breathable underwear that is nylon/lycra mix, is designed to be worn under camo or other outdoor clothes. Rynoskin contains no harmful chemicals, and insects can't enter through the cuffs or seams or penetrate the fabric.

Pittsboro's Colleen Olfenbittel, the Wildlife Commission's black bear and furbearer biologist, also had to deal with Lyme disease. She shares her cautionary story.

"In early June of 2012, I was building a trail behind our house and encountering a lot of ticks," she said. "At one point, I was even pulling ticks out of my hair. While I always do a tick check, I wasn't thorough enough and one snuck by me. It found its way to the back of my knee, where it attached itself through the night.

"I remember waking up to an itch behind my knee, scratching at it, then falling back asleep. It was only in the morning that I discovered the tick and I pulled it off immediately. Because I have had tick bites over the years, I didn't think too much of it, especially since it wasn't engorged with blood. However, later that day, I noticed that a rash was developing, and within two days I had a 6-centimeter red rash that was very itchy."

Olfenbittel says six weeks passed before she received a proper diagnosis; many peo-

ple take far longer before LD is correctly diagnosed. One doctor even told her that she had a localized skin irritation and that Lyme was rare in North Carolina, which is not true. Within two weeks, however, Olfenbittel began developing odd symptoms: her neck and arms were red and hot. Then came the uncontrollable tremors in her arms and legs.

"I [then] went to Urgent Care, where they prescribed an antibiotic as soon as I mentioned my tick-related rash from earlier that month," she continued. "The nurse told me that the Centers for Disease Control recommend antibiotics anytime someone develops a rash from a tick bite, and she expressed surprise and disappointment that my primary care doctor hadn't treated me with antibiotics. No tests were done to see what tick disease I had, as I was told the prescribed antibiotic would take care of most tick diseases we have in North Carolina. Then began 21 days of antibiotics.

"I spent the next two weeks on the couch, day and night. I was severely fatigued, yet could not sleep well. I would get hot spots on my neck and arms; I felt awful and couldn't work. I also lost my appetite and about 15 pounds. Because I wasn't getting better, I was referred to various doctors, who gave me various tests and various diagnoses. About three weeks into taking the antibiotic, I started to develop muscle and joint pains and still had no answers as to why I wasn't improving.

"I started to do a lot of research online and discovered that misdiagnoses are common for Lyme disease victims and that most doctors under treat the disease. I also learned that it was important to go to a Lyme-literate doctor, and, luckily, I found one in my area. Unlike the quick in-and-out appointments I had with my other doctors, she spent over two hours with me on my first visit and ordered several blood tests to thoroughly and correctly diagnose me with Lyme. She also stated most of her patients were either misdiagnosed or under treated due to most doctors' unfamiliarity with Lyme disease."

Olfenbittel also learned that the Lyme bacteria had penetrated her central nervous system and that the bacteria are good at eluding antibiotics. Currently, she is on several antibiotics and her health is improving.

INFORMATION SOURCES

Centers for Disease Control (a wealth of information on tick and mosquito related diseases): CDC.gov
Gamehide: gamehide.com
Insect Shield: insectshield.com
Rynoskin: rynoskin.com
Sawyer: sawyer.com
Tender Corporation: tender.com
ThermaCell: thermacell.com

PREVENT LYME DISEASE

- Wear repellent
- Check for ticks daily
- Shower soon after being outdoors
- Call your doctor if you get a fever or rash

I, too, feel that I am on the upswing, but as is the case with Olfenbittel, only the time will tell whether we will be fully cured. And here's one more caveat about Lyme disease... an individual can totally recover from this plague, be bitten again by a tick carrying LD, and contract the disease a second time.

I will continue to spend most of my leisure time outdoors, but I will be even more careful about protecting myself. The old cliché—it's a jungle out there—is true, but that jungle is not populated by wolves, lions and tigers but by something far more insidious—ticks and mosquitoes. ♡

Bruce Ingram has written five books on river smallmouth fishing, including one on the New River and "Fly and Spin Fishing for River Smallmouths." For more information and to read his weekly outdoors blog, visit bruceingramoutdoors.com.