

CHECK FOR TICKS

Creepy-crawlies are serious vectors for human and livestock diseases.

by Troy Smith, field editor

If you were a country kid, long summer evenings meant more time to play outside after supper. The extra daylight allowed more time to play hide-and-seek or build that ultimate treehouse. Maybe it was time for working with 4-H or FFA animals. When darkness settled in and you were called to the house and told to get ready for bed, you probably heard a common admonition: “Don’t forget to check for ticks!”

Maybe you endured routine examinations by a mom intent upon keeping her youngsters’ hides free of the nasty little eight-legged critters. She probably reminded you that besides being creepy, ticks sometimes made people sick.

She was right, too. Ticks can transmit pathogens responsible for diseases such as Lyme disease, Rocky Mountain spotted fever, anaplasmosis and others. Ticks also spread disease among animals, and that has economic consequences for livestock managers.

In the mid-19th century, ticks created a lot of friction between Texas cattle drovers and central-states stockmen. It was mainly due to the fact trail herds from south Texas carried cattle ticks northward, where they spread to local herds in Missouri, Kansas and eastern Nebraska.

The ticks hosted a blood

pathogen responsible for Texas cattle fever (bovine babesiosis), which caused anemia and other symptoms typically leading to death.

Serious vectors of human and animal disease agents, ticks are believed to transmit a greater variety of infectious organisms than any other kind of blood-feeding arthropod. Ticks are known to transmit bacterial, viral, fungal and protozoan pathogens. While not all species of ticks spread disease, tick-borne diseases are an increasing problem for humans and livestock in the United States. It doesn’t help when an exotic and invasive species of tick is introduced.

Exotic invader

That’s what has happened with the Asian longhorned tick, according to Rosemary Sifford, deputy administrator and chief veterinary officer for USDA Animal and Plant Health Inspection Service (APHIS) Veterinary Service. She spoke during the National Cattlemen’s Beef Association Cattle Health and Well-Being meeting convened last February, drawing attention to the increased incidence of vector-borne diseases in general and the expanding range of the Asian

longhorned tick in particular.

Native to eastern China, Korea, far eastern Russia and Japan, this tick is an established exotic species in Australia and New Zealand. It was first detected in the United States in 2017, but evidence suggests the Asian longhorned tick may have been in the United States since 2010.

“It’s now found in 17 states,” explained Sifford, noting how the tick was first identified in New Jersey, but has moved southward and westward as far as Missouri and Arkansas.

As of 2021, the tick’s presence also had been confirmed in Connecticut, Delaware, Georgia, Kentucky, Maryland, New York, North Carolina, Ohio, Rhode Island, South Carolina, Pennsylvania, Tennessee, Virginia and West Virginia. It’s possible, however, that the longhorned tick is more widespread than currently known.

“It’s a tick that’s able to survive under a variety of conditions, and it’s very prolific,” added Sifford. “Longhorned ticks can be very damaging to livestock, causing severe anemia, even if they aren’t carrying disease.”

Firsthand account

Tim McDermott can attest to the danger this tick poses to cattle. A veterinarian and Ohio State University Extension educator, McDermott says the Asian longhorned tick has been found on

animals in three of his state’s counties. Livestock deaths among mature cattle have occurred as a result of extremely large numbers of ticks feeding on the animals.

“Here in Ohio, we’ve seen mortalities due to cattle being absolutely covered with ticks and causing overwhelming blood loss,” states McDermott. “And Asian longhorned ticks can transmit disease. We know they can spread *Theileria*.”

Theileria orientalis is the specific blood pathogen responsible for a disease called theileriosis, or bovine infectious anemia. Its

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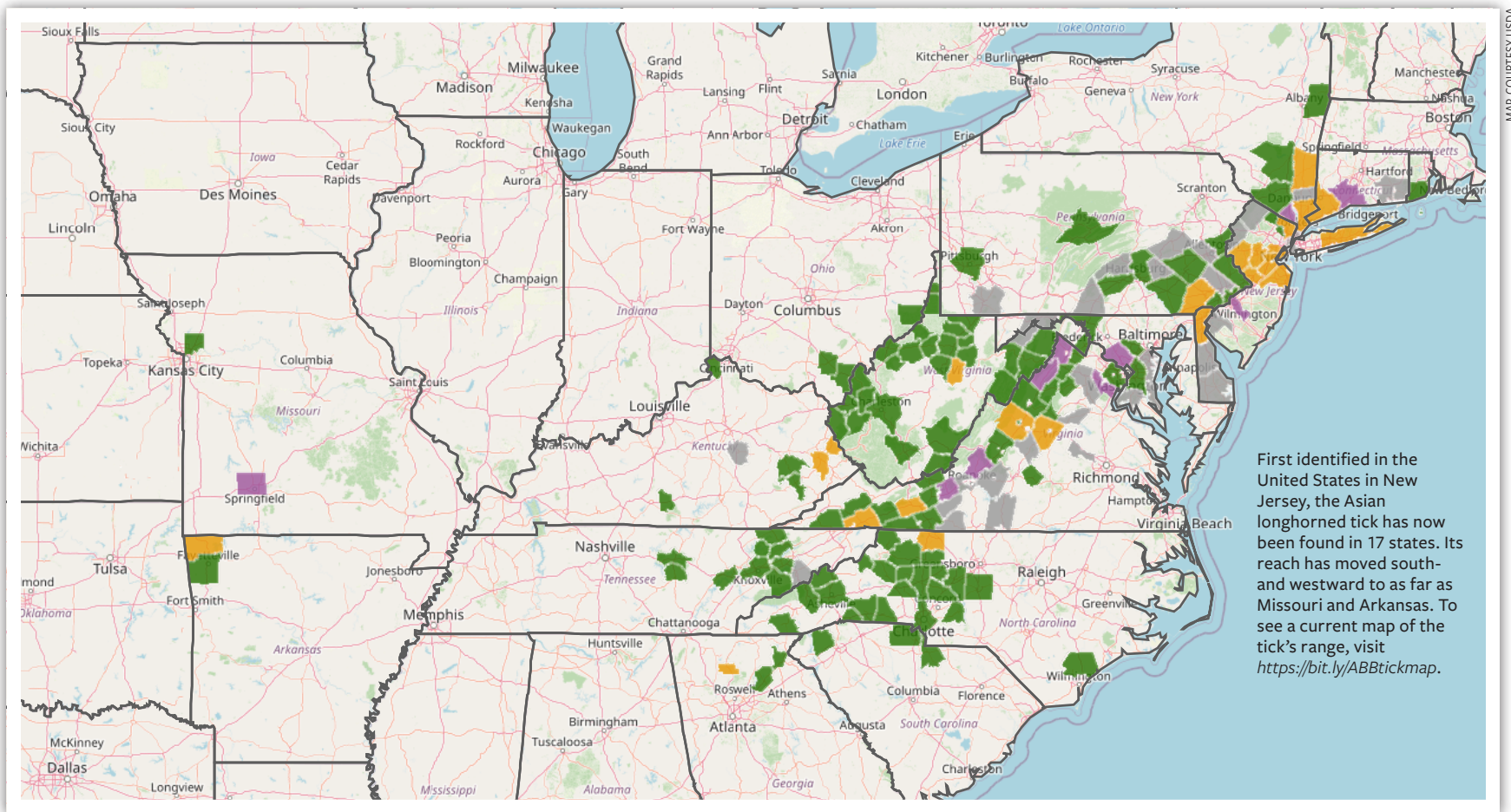
symptoms can include fever, enlarged lymph nodes, anorexia and lethargy, along with severe anemia. The disease can be fatal. Abortions and stillborn calves may also

result from theileriosis. However, it’s possible for some animals to carry the disease and show no signs of infection. Cattle that recover from the disease often remain carriers.

In other countries, longhorned ticks are known to transmit other animal diseases and spread certain diseases among humans. In the United States, so far, longhorned ticks pose the greatest danger to livestock. McDermott believes it is a potentially serious threat, considering its apparent adaptability and invasiveness.

Not picky about its choice of host, the longhorned tick is known to feed on a variety of wildlife including deer, raccoons, opossums, skunks, foxes, coyotes and some large birds. It’s not hard to understand how ticks could spread from one region to another, considering they’ve been found on





Canada geese. They also can spread through transport of infested livestock and pets, or on humans.

“Populations can grow rapidly, too. Longhorned ticks can reproduce through parthenogenesis, meaning the female does not need the participation of a male to lay viable eggs. One female can lay clutches of up to 2,000 eggs,” McDermott explains.

“We’ve been combating ticks for a long time, but things are different now. We’re seeing larger numbers of ticks in the environment, with some species moving into new ranges. The Gulf Coast tick and Lone Star tick, for example, have expanded their ranges. And now we’re facing new (to the United States) invasive species like the Asian longhorned tick,” says McDermott. “Twenty years ago, we had just one important tick species in Ohio. Now we have five.”

Be proactive

McDermott encourages producers to be proactive. Examine stock during handling or

processing, and practice biosecurity by checking new animals prior to introduction to the operation. Consult a veterinarian regarding measures to control ticks on livestock. Mowing tall vegetation around building sites and working facilities can help reduce the likelihood of large tick populations in those areas.

To protect themselves, their families and employees, producers should use repellent products and wear protective clothing (long sleeves and long pants) to reduce opportunities for ticks to come in contact with the skin. Treating clothing with permethrin insecticide/ectoparasiticide will enhance protection. Use all such products in accordance with label directions prescribed by law.

McDermott says people also need to realize that some of the things their parents or grandparents taught them about ticks may not be true.

“It’s not just in the woods that animals or humans pick up ticks. Some species prefer open areas, like pastures, meadows, hay fields or even backyard lawns,”

emphasizes McDermott. “And it’s not just a summertime thing. In many regions, it’s possible to contact ticks during all 12 months of the year.”

There’s another thing about ticks that’s scary for beef-eaters and beef-raisers. According to McDermott, the Lone Star tick, which is native to the United States, is capable of causing

alpha-gal syndrome (mammalian meat allergy) in susceptible humans. That’s no joke. It’s possible for a person to develop an allergy to steak and cheeseburgers, after experiencing the bite of certain ticks. That’s a pretty good reason to follow your mom’s advice. Before you go to bed at night, be sure to check for ticks. |

Ticks of consequence

There are some 850 different tick species in the world and about 90 species in the United States. Most of them pose no serious threat to the health of animals or humans, but some of them do. Following is information about several ticks of consequence present in the United States:

AMERICAN DOG TICK (WOOD TICK) This tick is found predominately in the United States east of the Rocky Mountains. While not a known vector of cattle disease, it is an annoyance to livestock. It is a vector of human diseases, including Rocky Mountain spotted fever and tularemia. The latter bacterial disease is sometimes called rabbit fever. The American dog tick bite has caused tick paralysis in dogs and humans. This is not an infectious disease, but a reaction to neurotoxin in the tick’s saliva.

BLACKLEGGED TICK (DEER TICK) Most common to the eastern United States and northern Midwest, this tick can be a vector of several serious diseases, including Lyme disease, human anaplasmosis and human babesiosis. Some research has focused on

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the potential for blacklegged ticks to be a vector for anaplasmosis in cattle. The related western blacklegged tick, found primarily along the western coast of North America, is a principal vector of Lyme disease in that region.

BROWN DOG TICK Widely distributed throughout the world, but most commonly found in warm climates, this tick feeds primarily on dogs, but it will occasionally feed on other hosts. While it is less likely to feed on humans than some other species, the brown dog tick has been known to transmit the organism causing Rocky Mountain spotted fever.

CATTLE FEVER TICK Dispersed throughout the world in tropical regions, this tick is primarily a parasite of cattle, but it has been known to infest white-tailed deer. Cattle fever tick infestations in cattle can lead to reduced weight gains and milk production. The tick also transmits the causative agent for Texas cattle fever (bovine babesiosis).

GULF COAST TICK Most abundant in the southeastern United States, Gulf Coast ticks have been found as far north as Maine. This tick is a known vector of agents causing Rocky Mountain spotted fever and canine hepatozoonosis. Its bite also may cause tick paralysis in dogs and humans.

LONE STAR TICK Most abundant in the southeastern United States, this tick's range does extend to northern portions of the country. Its feeding activity can cause wounds subject to secondary infections for a variety of hosts. During heavy infestations, animals may develop an anemic condition from loss of blood. This species of tick is also known to transmit human disease such as Rocky Mountain spotted fever and tularemia. Humans have developed mammalian meat allergy (alpha-gal syndrome) following the bite of Lone Star ticks.

PACIFIC COAST TICK Distributed along the Pacific Coast of North America, this tick feeds on a wide array of mammals and birds. It has been associated with transmission of Rocky Mountain spotted fever and Pacific Coast tick fever in humans, as well as tularemia in humans, cats and dogs. It has been implicated in cases of tick paralysis and may be a transmitter of anaplasmosis to cattle.

ROCKY MOUNTAIN WOOD TICK Distributed throughout much of the western half of the United States, this tick feeds on a variety of mammals, including wildlife, livestock, companion animals and humans. It is the primary vector for Colorado tick virus and also transmits Rocky Mountain spotted fever and tularemia. It also may cause tick paralysis.

SPINOSE EAR TICK This species of "soft tick" can be found throughout North America and is especially common in the southwestern United States. Not known to be a disease vector, this tick still causes significant production loss among infested cattle herds. Larvae and nymphs of this tick attach in the inner folds of the outer ear and suck blood. The wounds may become infected, giving rise to a condition known as canker ear. The constant irritation causes animals to become dull, unthrifty and even to lose weight. Infested animals shake their heads and rub their ears in an attempt to relieve the irritation.