

Researchers discover never-before-seen tick-borne disease

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Blacklegged ticks are known as one of the disease transmitting organisms for Lyme disease. Credit: CDC

Tick-borne diseases are a major public health problem around the world. Ticks carry and transmit a variety of microbes that cause disease. These illnesses, which include Lyme disease, Rocky Mountain spotted fever, and Tularemia, can cause a variety of symptoms, often serious and sometimes deadly.

Now, just in time for spring and the explosion of ticks in forests, lawns and trails, a new study by researchers from China and the University of Maryland School of Medicine (UM SOM) has uncovered a never-before-seen illness transmitted by ticks. It's possible that the disease could be a "substantial health threat" to humans and animals in areas where the carrier tick is common, the authors write in the paper.

J. Stephen Dumler, MD, a professor of pathology at the school, helped identify the newly discovered bacterial [species](#), which the researchers named *Anaplasma capra*. The paper was published in the latest issue of the journal *Lancet Infectious Disease*.

"This is an entirely new [species of bacteria](#)," said Dr. Dumler, an expert on tick-borne diseases who has worked all over the world. "This had never been seen in humans before. We still have a lot to learn about this species, but it may be that this bacteria is infecting humans over a wide area." He collaborated on the paper with scientists at several Chinese institutions: the Beijing Institute of Microbiology and Epidemiology, the Mudanjiang Forestry Central Hospital, and the Shanghai Institute of Medical Genetics at Shanghai Jiaotong University. The lead author of the study was Wu-Chun Cao, MD, PhD, of the Beijing Institute.

The researchers tested 477 patients in northeastern China who had been bitten by a tick over a month-long period in the spring of 2014. Of those, 28, six percent, were found to have been infected by the new species of bacteria. This microbe is related to other *Anaplasma* bacteria, some of which can cause illness when transmitted from ticks to humans. Dr. Dumler himself discovered one such disease, human anaplasmosis, two decades ago.

The symptoms of *A capra* infection include fever, headache, and tiredness, dizziness and muscle aches. The researchers successfully treated the infection with antibiotics, particularly doxycycline.

Because no one knew the bacteria existed, no one has looked for it, and it is not clear how widespread it is. In China, the species appears to be common in goats - the researchers decided to call it "capra" because the word means "goat" in Latin. But it may also infect other animals. Currently, it is difficult to diagnose infection - there is no simple blood test.

The bacterium is probably transmitted via a tick species known as the taiga tick. This species, which is closely related to the deer tick, lives in Eastern Europe and across Russia and Asia, including China and Japan. If this tick species transmits *A capra* throughout this area, human infection may be common. Dumler notes that about a fifth of the world's population, more than a billion people, live in areas where the tick resides.

"Dr. Dumler continues to distinguish himself as an international leader in scientific discovery related to [tick](#)-borne illnesses," said Dean E. Albert Reece, MD, PhD, MBA, who is also the vice president for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean of the School of Medicine. "As we understand more about these diseases, we are able to better address this growing international public health problem, as we have begun to do with Dr. Dumler's previous discoveries."

Provided by University of Maryland

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