Bat Tick: Researchers Identify Carios kelleyi in New Jersey

Live larval bat tick (Carios kelleyi) removed in 2019 from big brown bats in Mercer County, New Jersey. Photo: J. Occi/Rutgers Center for Vector Biology

In a recent Rutgers University-led study, researchers identified *Carios kelleyi*, a “soft” tick species associated with bats, for the first time in New Jersey. This parasite, of almost exclusively bats, is thought widespread in the US (as well as parts of Canada, Mexico, Costa Rica, and Cuba), with known occurrences in 29 of the 48 contiguous United States. Larvae collected from big brown bats (*Eptesicus fuscus*) in Mercer and Sussex counties were confirmed as *C. kelleyi* and added to the list of New Jersey ticks.
Live larval bat ticks (Carios kelleyi) removed in 2019 from big brown bats in Mercer County, New Jersey. Photo: J. Occi/Rutgers Center for Vector Biology

The risk of this tick to human health in New Jersey is unknown although C. kelleyi has been reported to feed on humans in other states. Unlike hard ticks, soft ticks feed multiple times over many years for short periods of time, with blood meals lasting just minutes to hours. The species of bats that host these ticks commonly roost in human-made structures such as attics of homes as well as barns. When not host-seeking or feeding, these ticks shelter in the cracks and crevices of bat roosting structures and may not be easily surveyed or detected. Occupants of these structures including humans, pets, and livestock, may potentially be bitten without awareness of these parasites. In other states, microbes, including a novel spotted fever Rickettsia, a novel relapsing fever-related Borrelia, and Bartonella henselae have been found in C. kelleyi. These microbes can be harmful to humans, pets, and livestock, and more research is needed to assess the medical and veterinary significance of these ticks.

The Lyme Disease Association (LDA) thanks study lead author, James L. Occi, who is also a member of the LDA’s Scientific & Professional Advisory Board, for his continued research on ticks and tick-borne diseases and for the tick photos he provided to the LDA for this article.

Read Rutgers Today article: Bat Tick Found for the First Time in New Jersey

Read Journal of Medical Entomology Article: First Record of
Carios kelleyi (Acari: Ixodida: Argasidae) in New Jersey, United States and Implications for Public Health