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IXODES DENTATUS (ACARI: IXODIDAE) IN MICHIGAN: FIRST STATE RECORDS AND OCCURRENCE ON A HUMAN

Edward D. Walker¹, Melvin L. Poplar², and Howard L. Russell¹

ABSTRACT

An *Ixodes dentatus* adult female was taken from a cottontail rabbit in Kalamazoo County, and a nymph from a child in Berrien County, in 1992 in Michigan. These findings represent the first records of *I. dentatus* in the state, and document an unusual parasitization of a human being by this species of tick.

Ixodes dentatus Marx is distributed in the eastern U.S., mainly occurring in coastal states, but it has been reported from several inland states as well, including Indiana and Ohio (Cooley and Kohls 1945, Clifford et al. 1961, Keirans and Clifford 1978, Kollars 1992). There are no previous records of this tick from Michigan. *Ixodes dentatus* normally parasitizes cottontail rabbits (*Sylvilagus floridanus*). It has also been found on several species of passerine birds, woodchucks, a white-footed mouse, and Norway rats (*op. cit.*). In this note, we report the presence of *I. dentatus* in Michigan, and document parasitism of a human being.

On May 15, 1992, in Kalamazoo County, a pet dog flushed a young cottontail rabbit from a hole. The dog's owner, a county health department sanitarian, noticed a tick on the rabbit and submitted it to the Michigan Department of Public Health (MDPH) for identification. We identified the tick as an adult, female *I. dentatus*. On June 15, 1992, parents in Berrien County, Michigan noticed a tick embedded in their child's head, between the ear and hairline. They submitted the tick to the state health department, via their county health department, for identification. We identified the tick as an *I. dentatus* nymph. The tick was not bloodfed.

Ixodes dentatus has not previously been identified from among 4,462 tick identification records compiled by the MDPH since 1968. These records include tick submissions from the public for identification by the MDPH; the Parasitology Laboratory, Michigan State University Veterinary Clinic; and the insect diagnostic service at the Department of Entomology, Michigan State University. Thus, our observations may represent new state distribution records for *I. dentatus*. Indeed, these two records in the southwestern part of the state may indicate that *I. dentatus* has recently become established in Michigan. Alternatively, *I. dentatus* may be endemic in the state, but has not previously been documented simply owing to a lack of surveys.

Experimentally, *I. dentatus* is a competent vector of *Borrelia burgdorferi*,

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the spirochete that causes Lyme disease (Telford and Spielman 1989a). This spirochete has been isolated from *I. dentatus* in Connecticut, Massachusetts, and Virginia (Anderson et al. 1989, Telford and Spielman 1989b, Levine et al. 1991), suggesting that *B. burgdorferi* may be maintained in a zoonotic cycle involving *I. dentatus* and rabbits, separate from the well-documented cycle involving *Peromyscus* mice and *Ixodes dammini* Spielman, Clifford, Piesman, and Corwin (Lane et al. 1991). Although we do not suspect that *I. dentatus* currently is an enzootic vector of the Lyme disease spirochete in Michigan, its presence along with *I. dammini* and *B. burgdorferi* in the state (Strand et al. 1992; E.D. Walker and M.L. Poplar, unpublished data) intimates that it may have some future role. Whether *I. dentatus* could transmit *B. burgdorferi* to humans depends upon whether this tick ever bites people. The frequency of this event is apparently very low (Anderson et al. 1989; R.A. Restifo, Vector-Borne Disease Unit, Ohio Department of Health, personal communication). Our observation of *I. dentatus* parasitizing a human documents this rare event in Michigan.

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