

# What's Eating You?

## *Dermacentor andersoni*

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*Dermacentor andersoni* (the Rocky Mountain wood tick) is a large tick with small anterior mouthparts that are attached at a rectangular basis capituli. Its scutum (hard dorsal plate) is ornate with large, deep punctations, and it is

noted for widely spaced eyes and posterior festoons. *D andersoni* has brown legs, and its coxa 1 (the attachment base for the first pair of legs) is bifid. Male *D andersoni* have no ventral plates and their coxa 4 is greatly enlarged (Figure 1). The female tick has a smaller scutum than the male, which leaves a portion of the abdomen exposed (Figure 2). The ticks are commonly found in open areas of low, bushy vegetation and are rarely found in heavily wooded areas.<sup>1</sup> They are most abundant throughout April and May, and their numbers decline by July.

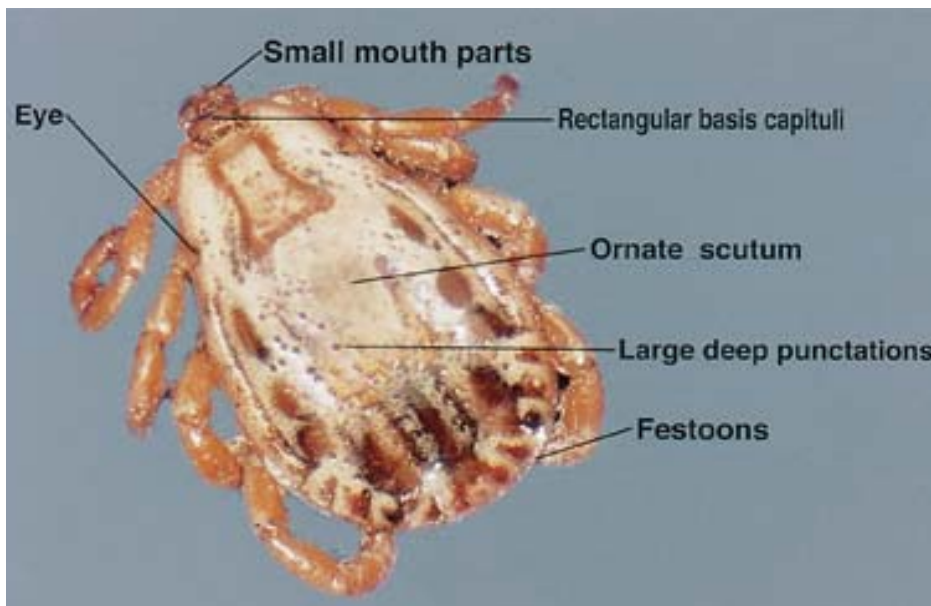
An adult tick prefers to attach to the head, neck, and shoulders of its host, and clinical lesions present as pruritic, erythematous papules. Pruritus can be intense and unrelenting, even with

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**FIGURE 1.** Male *Dermacentor andersoni*.

**FIGURE 2.** Female *Dermacentor andersoni*.



potent topical corticosteroid therapy. Intralesional injections of triamcinolone are often effective; however, some lesions require excision. During the course of engorgement, the saliva of *D andersoni* down-regulates cell-mediated immunity,<sup>2,3</sup> which may explain the delayed onset of many tick nodules.

*D andersoni* is the major vector of Rocky Mountain spotted fever in the United States; Colorado tick fever; Q fever; tularemia; and *Rickettsia peacockii*, a new species of *Rickettsia*.<sup>4</sup> Because the symptoms of Colorado tick fever are nonspecific and overlap with those of Rocky Mountain spotted fever, specific diagnostic tests are needed. Polymerase chain reaction amplification shows promise as a diagnostic tool.<sup>5</sup> *D andersoni* is also closely associated with tick paralysis, which can be dramatic with rapid, progressive ascension occurring 5 to 7 days after the attachment of a female tick. Removal of the tick characteristically leads to immediate improvement. Individuals with rapidly progressive ascending paralysis should always be examined for *Dermacentor* ticks. It is important to

note that tick paralysis carries a mortality rate of greater than 10%. The tick is often hidden by scalp hair and is found at an autopsy or by a mortician.

Treatment of Rocky Mountain spotted fever must be started promptly and is often based on a presumptive diagnosis because delays in therapy can prove fatal. Although there is no question that therapy must be started as soon as possible after symptoms occur and that tetracyclines and chloramphenicol are found to be active against the organism, the role of antibiotic prophylaxis after tick bites remains controversial. A study by Kenyon et al<sup>6</sup> suggests that a single dose of tetracycline given more than 48 hours before expected onset of symptoms may prevent the disease. Optimal timing of this single dose is difficult, however, because the disease incubation period ranges from 4 to 10 days and may be related to the size of the inoculum.<sup>7</sup> A single dose given at the wrong time can delay onset of symptoms but not prevent disease. There is no evidence to suggest that full courses of antibiotic therapy are less effective if started before the onset of clinical symptoms;

however, the cost-effectiveness of prophylactic regimens remains questionable. These regimens are most likely to be cost-effective for patients who find heavily engorged ticks in highly endemic areas—heavily engorged ticks have been attached to their hosts longer and are more likely to transmit disease than are ticks that have been briefly attached.

Although Rocky Mountain spotted fever is vertically transmitted from a tick to its offspring, this type of transmission decreases the viability of the offspring,<sup>8</sup> which aids in containing the disease.

## REFERENCES

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