DEHYDRATION TOLERANCE OF THE ROCKY MOUNTAIN WOOD TICK, *DERMACENTOR ANDERSONI* STILES (ACARI: IXODIDAE), MATCHES PREFERENCE FOR A DRY ENVIRONMENT

Jay A. Yoder, Daniel R. Buchan, Nicholas F. Ferrari and Justin L. Tank
Department of Biology, Wittenberg University, Springfield, OH 45501, USA (e-mail: jyoder@wittenberg.edu).

ABSTRACT - Peak activity of the medically significant Rocky Mountain wood tick, *Dermacentor andersoni* Stiles (Acari: Ixodidae), during hot summer months in the Rocky Mountains and southwestern Canada was evaluated by determining water balance characteristics for each of its developmental stages. This tick is dry-adapted and has a water balance classification as xerophilic based upon interspecific comparison with other ticks and a low net transpiration (water loss) rate as the distinguishing feature. All stages (eggs excepted) rely on water vapor as the primary source of water, as evidenced by critical equilibrium humidity assessments and an inability to drink free water from droplets. A relatively low dehydration tolerance limit and high net transpiration rate is reported for the larva, indicating that it is the most sensitive stage to water stress in the lifecycle. The xerophilic nature of *D. andersoni* makes it less dependent upon a moisture-rich environment and identifies overhydration, although unstudied, as the primary factor limiting its distribution to the Rocky Mountain area.
Key words - Acari, Ixodidae, *Dermacentor andersoni* Stiles, water balance, Rocky Mountain spotted fever.

Abstract # 13
Internat. J. Acarol. 33(2): 173-180.