ZOOLOGY

Potential detection and utilization of substrate-borne vibrations by chameleons (*Chamaeleo calyptratus).* KATHRYN C. LASLIE, EMILY J. HAMILTON and MICHAEL E. SMITH, Department of Biology, Western Kentucky University, Bowling Green, KY 42101.

Understanding the modes of communication used by a species is essential to the understanding of their ecology, behavior, and evolution. Substrate-borne vibrations have been reported to be produced by the veiled chameleon (*Chamaeleo calyptratus*) in courtship and disturbance contexts (Barnett et al. 1999). We tested the sensitivity of veiled chameleons and graceful chameleons (*Chamaeleo gracilis)* to vibrations by placing chameleons, one at a time, on a wooden dowel attached to a permanent magnetic shaker. We video-recorded each chameleon’s behavior before, during, and after a three-pulse vibrational stimulus of 25, 50, 150, 300, or 600 Hz (acceleration of 6 m/s2) that was verified via an accelerometer attached to the dowel. Both species exhibited a stop-behavioral response (i.e. lack of movement) when exposed to a stimulus of 50 or 150 Hz, while displaying a reduced sensitivity at all other frequencies (i.e., less or no reduction in movement). To ascertain their behavioral threshold, a second set of experiments tested behavioral responses at lower accelerations (<6 m/s2). Finally, a third set of experiments observed the vibrational behavioral responses to inter and intraspecific interactions in courtship, competition, and predator-prey contexts. These findings improve the understanding of behavioral communication between chameleons, and can be utilized as a basis for further research into the behavior, morphology and physiology of chameleons.

Barnett, KE, Cocroft, RB, and Fleishman, LJ. 1999. Possible communication by substrate vibration in a chameleon. *Copeia* 225–228.