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Canonical Correlation of Allozyme and Morphological Variation Across Distinct Geological Features in one Species of Striped Ground Crickets

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ABSTRACT

We performed an extensive survey of morphological characters on all individuals of two species of striped ground crickets, *Allonemobius fasciatus* and *A. allardi* (Orthoptera, Gryllidae), collected for a population genetics study by Weibel & Howard (2000). Multivariate analyses showed that not only are these two cryptic species significantly different with respect to morphology but populations within each species also differ significantly with respect to morphology. Univariate tests identified morphological characters that are most informative for discriminating between these species and those characters that contribute to differences observed among populations within species. A canonical correlation analysis showed that composite variables of allozyme characters (Weibel & Howard, 2000) and morphological characters are highly correlated in *A. fasciatus*. The composite variables plotted against locality clearly demonstrated that differences among populations in *A. fasciatus* correspond with distinct geographic regions in the United States. Canonical correlation analysis of morphology and allozymes can be a powerful tool for identifying species in newly discovered populations, identifying the geographic locality from which an individual was collected, and providing information on the origin of geographically isolated populations.

Key words: *Allonemobius*, canonical correlation, distribution, morphology, allozymes.