

GEORGE MERCER AWARD



Jean L. Richardson

The oldest of the awards granted by the ESA, the George Mercer Award is given in memory of a young British ecologist who was killed in action in World War I. The award is made to an author less than 40 years old, in recognition of a single outstanding paper in ecology published during the past two years. The winner of the Mercer Award for 2003 is Dr. Jean L. Richardson of Brock University, for her paper, "The relative roles of adaptation and phylogeny in determination of larval traits in diversifying anuran lineages," published in 2001 in *The American Naturalist* 157:282–289.

This paper describes a bold, synthetic approach to an issue at the heart of evolutionary ecology. Ecologists and comparative biologists have picked away at the issue of the relative roles of adaptive evolution and phylogenetic inertia in causing patterns of trait variation. Many past studies have focused on one or a few traits and/or a narrow range of taxa. Dr. Richardson recognized that a convincing comparison of the roles of adaptation and phylogeny would require analysis of a large number of well-chosen phenotypic traits in a set of species encompassing substantial phylogenetic diversity. She selected an ideal study system (pond anurans) in which the dominant selective forces

and relevant traits were well studied, and an appropriate range of taxonomic diversity existed.

In this paper, Jean Richardson describes the results of a substantial empirical effort in which she measured 19 morphological, physiological, and behavioral traits of larvae of 14 frog and toad species representing three families. The data are skillfully analyzed with an array of sophisticated multivariate techniques. The results support some role for both natural selection and ancestral trait values in determining the course of multivariate phenotypic evolution, but perhaps more importantly, demonstrate that neither force dominates. Along the way to this conclusion, she also nicely illustrates the value of independent contrast correlations in unraveling the nature of multivariate evolution. Dr. Richardson's convincing illustration of the complexity of the adaptive landscape sets a new standard for studies aimed at explaining broad patterns of variation in ecologically important traits. The ESA is pleased to present the 2003 Mercer Award for such an outstanding paper.

Mercer Award Subcommittee:
Stephen Heard (Chair), Brian Enquist,
Susan Mopper, Shahid Naeem, Judy
Stamps, Mike Willig, and Alice Winn.