## Dualism and conflicts in understanding speciation


### Abstract

Speciation is a central but elusive issue in evolutionary biology. Over the past sixty years, the subject has been studied within a framework conceived by Ernst Mayr and Theodosius Dobzhansky and subsequently developed further by numerous other workers, In this "isolation" theory, the evolution of reproductive isolation is a key element of speciation; natural selection is given only secondary importance while gene flow is considered prohibitive to the process. In this paper, I argue that certain elements in this approach have produced confusion and irreconcilability among students of speciation, The more prominent debates in speciation (i.e., the species definition, sympatry/allopatry, and the role of reinforcement) all derive from an inherent conflict between the "isolation" theory and Darwin's "selection" view on species and speciation tin which disruptive selection is crucial), New data, mainly from field ecology, molecular population genetics, laboratory studies with Drosophila and computer analysis, all suggest that the isolation theory may no longer be the most desirable vantage point from which to explore speciation. Instead, environmental selection in large populations, often unimpeded by ongoing gene flow, appears to be the decisive element. The traditional preoccupation with reproductive isolation has created gaps in our knowledge of several crucial issues, mainly regarding the role of environmental selection and its connection with mate selection.