Molecular Genetics Applied to Systematics

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SYSTEMATIC BIOLOGY HAS COME a long way since the early days of classification which culminated in the eighteenth century with Carl Linnaeus's (1707–1778) insistence on the immutability and clear-cut distinction of species. Modern systematists and evolutionary biologists now accept the fact that species are in a constant state of evolutionary flux and that it is often impossible to establish species boundaries. Our goal as systematists is to provide the taxonomic and evolutionary framework on which all biological science relies for making order out of the diversity of life and for comprehending the relationships among organisms. As Simpson (1961) noted, "systematics is the scientific study of the kinds and diversity of organisms and of any and all relationships among them."

Modern Systematics, therefore, draws on all biological disciplines to achieve this goal. Such diverse fields as paleontology, morphology, development, physiology, behavior, ecology and genetics have contributed in one way or another to many good systematic studies. In recent years molecular biology, a field that focuses on the structure and function of proteins and nucleic acids such as DNA and RNA, has brought a new perspective to systematics and our perception of the evolution of life. Its power