

Molecular Approaches to Evolution

by J. Ninio

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One of the major goals in biology is to understand how life originated on this planet and how evolution led from the primordial soup to what we see around us today. In the past twenty years, much effort has gone into trying to understand these problems on a molecular level and this slim and reasonably-priced book reviews the progress that has been made.

What Jacques Ninio has produced, however, is far from an ordinary review. The book does deal with most aspects of molecular evolution. There are short chapters on the chemistry of cellular constituents, prebiotic chemistry, population genetics and the evolution of the immune system. Two further aspects are discussed more extensively. One of these concerns the sequences of functionally similar proteins and nucleic acids from different species and the evolutionary lessons to be learned from them. The second is the genetic code and the kinds of early events which could have led to its development. But the main features of the book are its criticism, usually highly constructive, of current ideas and the introduction of the author's own, original solutions.

Ninio's main interest lies in how simple systems, lacking specificity in their replication and catalysis,

could have acquired greater accuracy through evolution. It is a different approach from that of comparing amino acid replacements in cytochrome c or haemoglobin and it is exciting. Although the ideas are often subtle, the language is simple and free from unnecessary mathematical formulations.

While the book is reasonably free from misprints and errors, it contains a much more unusual kind of blemish. Any human activity, including scientific research, can produce personal frustrations. But a book on molecular evolution is not the right place to sublimate them. The text contains a number of quite personal references which are bound to be unnecessarily offensive to the scientists in question. It contains other remarks thrown in for no obvious reason: why state that the laboratory of a very well-known scientist overlooks the best nudist beach in California, if it doesn't help the argument and if you don't plan to show a photograph? Such minor criticisms apart, this book is a must for all interested in molecular evolution and the new ideas taking shape in this field.

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