

# REVIEW

## PRINCIPLES OF PALEOECOLOGY: A REVIEW

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**PRINCIPLES OF PALEOECOLOGY:** An introduction to the study of how and where animals and plants lived in the past, by Derek V. Ager (Imperial College, London). Published by McGraw-Hill Book Company, New York, 1963, xi + 371 pp., illustrated, \$10.75.

Paleoecology is a new, active, and rapidly developing field of geologic research. In the past several decades an imposing body of diversified literature related to fossils and their environments has arisen. The result has been a somewhat incoherent and ill-defined field of investigation for the paleoecologist. Paleoecology has required definition and Dr. Ager provides much to satisfy this demand. This is the first textbook on paleoecology published in English.

The book is divided into three sections. Part One introduces the subject, its scope and limitations, and treats of the nature and classification of environments.

Part Two includes nine chapters, each of which deals with a particular approach or method in the study of paleoautecology (the ecology of individual fossils and fossil groups): comparison with living representatives, deductions from morphology, orientation, organic associates, evidence of activity, associated sediments, lateral variation, geographical distribution of single taxonomic groups, and changes in habitat and habit.

In Part Three, methods of paleosynecology (the ecology of fossil assemblages) are presented in six chapters: comparison with living assemblages, other geological evidence, density and diversity, relationships between species, lateral and vertical changes in assemblages, and geographical distribution of assemblages. A seventh chapter concludes this section with four paleoecological syntheses.

Two appendices follow the text: 1, Glossary of paleoecological terms; and 2, Field questionnaire. These are followed by a lengthy bibliography and a thorough index.

In introducing his subject, the author com-

pares the materials studied by the paleoecologist with a parking lot full of abandoned earlier models of automobiles, stating: "The ecologist's automobile is dynamic in space but static in time; the paleoecologist's automobiles are static in space but dynamic in time." Thus, he aptly describes the greater task confronting the student of fossils and fossil environments.

"Uniformitarianism — the main method and basis of geological reasoning—is equally applicable to paleoecology." With this statement Dr. Ager admits our necessary commitment to this basic principle, though cautioning that change through time is inevitable and must be considered.

The book is well illustrated with specific examples from the rock record. These are widely distributed geographically and through geologic time. It is refreshing that the author—unlike many Europeans—is sufficiently conversant with the literature on North America to include numerous examples from the strata of this continent. Suitable attention is given to experimental and statistical techniques. Field procedures are discussed. It is commendable that the examples of data presentation used to illustrate methods are taken from actual studies.

The language is clear, logical and remarkably uncomplicated by the proliferation of new terminology which mars many similar works. The text is fairly objective with one obvious exception. References to the hypotheses of continental drift and polar wandering are made in several places, but they are dismissed perfunctorily and even humorously. These concepts deserve more thorough treatment, even though the author clearly is not a "drifter."

In summary, this book is well written, comprehensive, and lucid. It will be welcomed by paleontologists and will occupy a convenient niche on their reference shelves.

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