



**IN THE NAME OF ALLAH,
MOST GRACIOUS, MOST MERCIFUL**

INVERTEBRATE PALEONTOLOGY

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PREFACE

The present student book is prepared based on the syllabus of the “Principals of Invertebrate Paleontology” course (Geo 243) of the Geology and Geophysics Department, College of Science, King Saud University. The specific goals of invertebrate macro-paleontology are:

1. To identify the geologic range of the different fossil groups.
2. To include enough information about morphology, terminology and classification for each phyla.
3. To differentiate between different phyla and classes.
4. To identify the basis of classification of the different fossil groups.
5. To understand the ecology and mode of the life of the different phyla.
6. To give enough information on stratigraphy throughout the fossil record of invertebrates to allow determination of relative geologic age.

This student book includes 14 chapters. All chapters begin with the objectives and end with questions that measure knowledge, understanding and mental and practical skills throughout the chapter. Most chapters include anatomy, morphology, classification, ecology and modes of life. Many of the bivalve, gastropod, scleractinain, echinoderm and bryozoan photos (without references) were done through field trips and research along the Red Sea coast for the first author.

Chapter I discusses the requirements of fossilization, modes of fossil preservation, fossil record, index fossils and importance of fossils. Chapter II is concerned with the classification and nomenclature of living organisms from the following points of view: taxonomic levels, binomial nomenclature and nomenclature problems. Chapter III deals with morphology, structural grades, classification, fossilization and ecology and mode of life of phylum Porifera.

Chapter IV discusses the morphology and classification of Phylum Cnidaria as well as distribution, types and ecological parameters of coral reefs. Chapters V and VI deal with the morphology and taxonomy of Phylum annelida and class Trilobita respectively. Chapters VII, VIII and IX deal with anatomy, morphology, classification, ecology and modes of life for classes gastropoda, cephalopoda and pelecypoda respectively.

Chapter X discusses Phylum Brachiopoda from the following points of view: morphology, homomorphy, taxonomy and modes of life. Chapter XI deals with the zoarial morphology and growth-forms, classification and ecology of Phylum Bryozoa. Chapter XII discusses morphology, anatomy, taxonomy and modes of life of Phylum Echinodermata, while Chapters XIII and XIV deal with morphology and taxonomy of Class Graptolithina and trace fossils respectively.

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