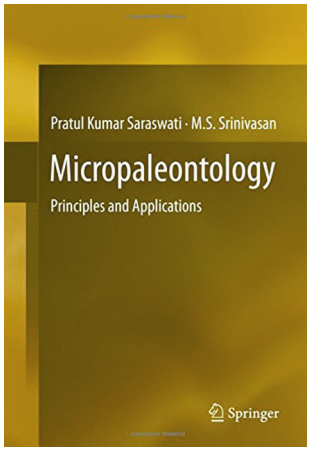

Micropaleontology: Principles and Applications. Pratul Kumar Saraswati and M. S. Srinivasan. Springer International Publishing, Switzerland. 2016. 224 pp. Price: 83,19€.

In recent years there has been a dearth of books on micropalaeontology written in modern perspective, especially in view of the knowledge gathered as a result of the study of microfossils from deep-sea cores obtained during various oceanographic expeditions in the last few decades. These studies revolutionized the concept of application of microfossils in unfolding geological problems, hitherto partially understood. The book under review fills this gap and is the latest contribution in the field of micropalaeontology.

The book has been divided into three parts. Part I deals with the principles of micropalaeontology, the subject matter that needs to be understood before proceeding to undertake studies on microfossils and their applications. It is divided into five chapters. Chapter 1 introduces different types of microfossils, collection of samples from outcrops, subsurface as well as from deep-sea cores. Since in most microfossil groups, their study requires separation of microfossils from rocks, methods have been described for the recovery of microfossils. Preparation techniques for scanning electron microscopy and shell geochemistry are also briefly discussed. Chapter 2 describes various natural processes through which hard parts of microfossils pass after the death of the organisms. Chapter 3 concerns with intricate relationship between chemical composition of shells and ambient water. Process of biomineralization is described for certain microfossil groups in an easy manner. Chapter 4 familiarizes us on taxonomic classification with suitable illustrations. Chapter 5 deals with the basic concepts of ecology and describes various environmental factors which influence the distribution of organisms. A few popular quantitative methods used in palaeoecological analyses have been explained.

Part II (chapters 6–9) of the book is mainly concerned with the morphology, ecology and geological history of various microfossil groups; each chapter deals with microfossils of a particular chemical composition. Morphological description of each group, though brief, is supported by ample illustrations.

Part III (chapters 10–13) deals with applied aspects of micropalaeontology. Chapter 10 describes basic concepts of biostratigraphy. Types of biostratigraphic zones are explained with suitable diagrams. Examples of foraminiferal zones, calcareous nannoplankton zones and shallow benthic zones and their characteristic larger foraminifera for the palaeogene are presented. The chapter also deals with the graphic correlation method, highlighting its usefulness in biostratigraphy. Microfossils are well known to unravel the palaeoenvironment and palaeoclimate, an account of which is presented in chapter 11. In this chapter authors have explained microfossil-based methodology used in estimating palaeobathymetry, oxygen content, organic flux and pH-fluctuations of ocean water. Chapter 12 discusses basin analysis and hydrocarbon exploration and explains methods by which these are achieved with the help of microfossils. Chapter 13 is devoted to palaeoceanography, the study connected with the physical, chemical and biological evolution of oceans through geological times, like fluctuations in carbonate compensation depth, surface water and deep-sea circulation, opening and closing of seaways, oceanic changes during glacial–interglacial periods and palaeoproductivity. The chapter vividly describes various approaches in palaeoceanographic reconstruction. The book is a valuable contribution to earth science and covers important aspects of micropalaeontology; its main emphasis being on applications. It is an attractive and balanced book on the subject. I believe that it will be a good textbook for a general course on micropalaeontology and/marine micropalaeontology, and will also be useful to researchers, teachers, academia and industry.

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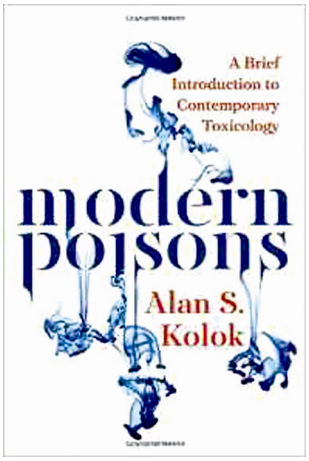

Modern Poisons: A Brief Introduction to Contemporary Toxicology. Alan S. Kolok. Island Press, 2000 M Street NW, Suite 650, Washington, DC 20036. 2016. 224 pp. Price: US$ 40.00. ISBN: 97816-10913812.

Toxicology is the branch of science that deals with poisons or toxic substances. Poison is referred to as any substance that causes harmful effect when administered, either by accident or by design, to a living organism. Poison is a quantitative concept; almost any substance is harmful at certain doses. At the same time, it may not be harmful at lower dose rates. Similarly, one substance at a particular dose can be poisonous to one organism, but not to another. The book under review has 20 chapters and covers well the topics regarding what makes a substance to be called as poison; dose–response relationship, why some chemicals are easily excreted from the body, while others are not; body defence mechanism; correlation between animals and humans in scientific experiments; journey of toxic chemicals from source to target site; journey of different pollutants and transport of toxic components in the environment; what are toxins, poisons and venom; whether metals are a gift or curse to the system; role of combustion