

## BOOK REVIEW

BUSH A. O., FERNÁNDEZ J. C., ESCH G. W. & SEED J. R: **Parasitism: The diversity and ecology of animal parasites**. Cambridge: Cambridge University Press, 2001. IX+566 pages. Format 191×245 mm. Soft cover. Price Lstg 29.95. ISBN 0-521-66447-0

The authors are accredited experts affiliated with the universities and scientific societies in USA and Canada. As stated in the preface, the present book is derived from another, entitled *A functional biology of parasitism* (Chapman & Hall, 1993). The authors provide fundamental insights into the parasitism – the most prevalent, ubiquitous life style among organisms. Introduced are data that deal with the diversity of major eukaryotic parasites of animals considering the impact they have on their hosts. Special attention is centred upon ecological relationships of the host-parasite systems. Not omitted is basic biochemical, molecular and immunological piece of information relevant to parasitism. The volume is composed of 16 chapters divided into sections (subchapters – in number from 3 up to 12). Chapter 1 is intended to give the introduction to parasitology while discussing parasitism in historical perspective, symbiotic relationships, kinds of parasites, kinds of hosts, and ecology in an environmental context. Immunological, pathological, and biochemical data related to parasitism are outlined in chapter 2. Consequent thematic block of seven chapters (3 through 9; 265 pages = 47%) provides access to the systematics of protozoans and metazoans. In chapter 3 examined are three protozoan phyla: the Sarcomastigophora, Apicomplexa and Ciliophora. It is important to be mentioned that the systematics of the Protozoa is under constant revision and with the use of molecular procedures will continue to be revised for the foreseeable future. Newer classifications introduce different schemes and do not include the group Sarcomastigophora. Microsporidians are now considered to be Fungi. Chapter 4 is devoted to flatworms Platyhelminthes comprising seven taxonomical groups. It is stated here that flatworms present a diverse group showing great variability in anatomy, life history, size, and habitat – they are likely ancestors of all the metazoan phyla. Systematic classification of these parasites has changed significantly in the last decade or two because of morphological information made available by electron microscopy, the application of cladistic techniques, and molecular systematics. The classification outlined here is based on studies of Brooks and other authors in the nineties of the past century. Chapter 5 focuses on roundworms Nematoda. It is stressed that nematodes are now recognized as perhaps the most significant metazoan parasites associated with humans. Recent advances in molecular systematics (18S rDNA sequences) may clarify the phylogenetic relationships in nematodes, nonetheless new proposals await further verification. The classification scheme used here is one of convenience based on morphological data more readily available than nucleotide sequences. In subsequent chapters 6 through 8 acanthocephalans, pentastomids and arthropods are analyzed. In addition to the major phyla of parasitic organisms discussed in previous chapters, in chapter 9 attention is centred upon other animal phyla that are parasitic in some stage in their life cycle. With the application of the newer molecular techniques, it is now recognized that myxosporidians Myxozoa, formerly classified among the Sporozoa, are not unicellular protozoans but a metazoan group. Subsequent chapters 10 through 16 take into consideration selected general phenomena of parasitism. Chapters 10 and 11 analyse population concepts and factors influencing parasite populations while giving general definitions, and describing environmental factors, distributional patterns, dynamics of population growths, density-dependent and -independent factors, regulation of parasite populations. Chapter 12 provides access to the influence of parasites on host populations: the Crofton's approach (analysis of host-parasite systems), aggregation and regulation, epidemiological implications, non-genetic and genetic predispositions. In chapter 13 looked at is the ability of parasites to complete their life cycle. Chapter 14 gives an overview of parasite communities. In chapter 15 elucidated are biogeographical events and processes, geographical distribution of parasites and diverse aspects of ecology and applied biogeography. Final chapter 16 illuminates biological evolution. In conclusion, there is an extensive glossary (14 pages) of key terms relevant to topics discussed. Accentuated on grey background, there are separate textual boxes containing supplemental discussions and topical observations to the current text. The volume is extensively illustrated by a wealth of figures numbered separately in each chapter and composed of schematic line drawings and photographs. Featured are individual parasitic organisms, views of external and internal structural parts, various developmental stages, life cycles, functional interactions and metabolic pathways, diverse cladograms and evolutionary trees, miscellaneous diagrams, geographical maps, and selected pathological conditions in parasitized humans and animals. Moreover, tabular overviews summarizing data given in the textual part are numerous and detailed. Written in a user-friendly style, this monograph offers an original and most informative approach to the study of animal parasites of medical, veterinary as well as general zoological interest.

*Jindřich Jira*