Becker, W.M., Reece, J.B., Poenie, M.F. (ed.): **The World of the Cell.** 3rd Ed. - The Benjamin/Cummings Publishing Co, Menlo Park - Reading – New York – Don Mills – Wokingham – Amsterdam – Bonn – Paris – Milan – Madrid – Sydney – Singapore – Tokyo – Seoul – Taipei – Mexico City – San Juan 1996. ISBN 0-8053-0880-6. 920 pp., GBP 27.95.

The World of the Cell is a comprehensive textbook of cellular and molecular biology "for students preparing for careers in biology, medicine, and related fields". The research interests of its first author are in regulation of the expression of genes that encode enzymes of the photorespiratory pathway in plant cells. First version of the present textbook was "Energy and the Living Cell", a paperback published as soon as in 1977. However, the whole extensive and immensely differentiated field of contemporary cell biology is successfuly covered in this book. The content of the volume is reflected in the titles of its parts and chapters.

Part One, Introduction, contains three chapters dealing mainly with various aspects of cell chemistry. Part Two, Cell Structure and Function, describes in seven chapters cell organelles and gives an overview of their functions. Part Three, Energy Flow in Cells, explains in three chapters energetic metabolism of cells. In Part Four, Information Flow in Cells (cell cycle, genes, their expression and its regulation) is dealt with in six chapters. Part Five describes, in four chapters, Specific Cell Functions (cytoskeletal structures and functions, cellular movement, and signal transduction mechanisms in nerve and other cells), and Part Six is dealing with two Special Topics in Cell Biology, the foci of contemporary research in biomedicine, namely, Cellular Aspects of the Immune Response, and Cellular Aspects of Cancer. The Appendix is devoted to Principles and Techniques of Microscopy whereas many other experimental techniques are dealt with in appropriate chapters. At the end of each of 25 chapters, there are Perspective (a summary of the chapter), Key Terms for Self-Testing, Problem Set (a group of well chosen questions for reflection whose answers are given in the Solution Manual, the volume which can be bought separately as well as the set of 78 transparencies), and Suggested Reading. Each chapter is completed by (one or two) Boxed Essays concerning the topic of the chapter. The textbook is supplemented by general Index.

From the point of view of photosynthesis research, two chapters are the most interesting: chapter five (from the second part) named Bioenergetics: the Flow of Energy in the Cell (26 pp.), and, of course, chapter thirteen (from the third part): Phototrophic Energy Metabolism: Photosynthesis (32 pp.). In this chapter, after an overview of photosynthesis, well balanced explanation of chloroplast structure, photosynthetic energy transduction, NADPH synthesis and photophosphorylation in oxygenic phototrophs, photosynthetic carbon assimilation, saccharide synthesis, and other photosynthetic assimilation pathways are given. The structure and function of the photosynthetic reaction centre from a purple bacterium (Nobel Prize 1988) are dealt with, as well as the decrease of photosynthetic efficiency due to RuBPCO activity, and C_4 and CAM photosynthesis as two solutions of this problem. Boxed Essay in this chapter is devoted to the discovery of photosynthetic carbon fixation (Calvin) cycle. The chapter is properly illustrated by 21 colour figures. In Suggested Reading, divided into General References (mainly important photosynthesis monographs) and several groups of references dealing with more specialized topics of photosynthesis, I lacked items on The Chloroplast published after the year 1985.

As the conclusion, however, I recommend this excellent book as a rare source of wealthy information concerning cell structure and function in the broadest sense. It will be without doubt useful not only for university students.

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