Glaser, R.: **Biophysics.** - Springer-Verlag, Berlin - Heidelberg - New York 2001. 361 pp. EUR 45.95. ISBN 3-540-67088-2.

Biophysics – the science of physical principles of biological systems – is presented in this textbook from molecular structure of biological systems, interfacial phenomena and membranes, the energetics and dynamics of these systems, to the kinetics of biological systems.

The chapter "Molecular structure of biological systems" is introduced by the part dealing with intramolecular bonds. After that, the author explains shortly the basic aspects of molecular excitation and energy transfer. Three pages are also devoted to introduction into photosynthesis. The Boltzmann's thermodynamic probability and entropy is shown very simply in section "Thermal molecular movement, order and probability", where self-organization and stability of biological structures are also discussed. Here, reader is introduced into problems as distribution of molecular energy, vibration, rotation, and translation of molecules, energy of enzyme activation, and so on. Section "Molecular and ionic interactions as the basis for the formation of biological structures" is fully devoted to properties of water molecules. The last section of this chapter is inscribed to interfacial phenomena and membranes.

"Energetics and dynamics of biological systems" is the largest chapter (130 pages). Firstly, the key sections are "The nonequilibrium distribution of ions in cells" and "Electric fields in cells and organism", where the ion pumps, transmembrane potential effects, and the action potentials of various nerve and muscle cells are illustrated. Secondly, in sections "Mechanical properties of biological materials" and "Biomechanics of fluid behavior" some basic properties of fluids are described (viscosity and viscoelasticity, the biomechanics of the human body; laminar and turbulent flows – blood circulation, swimming, flying).

The topics of the next chapter are mainly mechanical oscillations (vibrations, infra- and ultrasound, biophysics of hearing) and electromagnetic fields (from static fields to satellite TV frequencies, *etc.*), and their effects on biological systems, from nature, properties, dosimetry of (ionising) radiation, to aspects of protection against radiation or noise.

The last chapter is devoted to the kinetics of biological systems. The reader can find here some foundations of systems theory, introduction to compartmental analysis, model approaches to some complex biological processes, such as models of neural processes.

The textbook is not so rangy as well-known Biophysics edited by W. Hoppe, W. Lohmann, H. Markl, and H. Ziegler (Springer-Verlag, 1983), where students can find, *e.g.*, structure determination of biomolecules by physical methods (spectroscopy). Glaser's Biophysics is a modern textbook, comparable with Russian biophysics monograph written by M.V. Vol'kenshteĭn (Biofizika, Nauka, Moscow 1988). This first English edition is not just a translation of the fourth German edition, but is rather a fully revised fifth edition. Many imaginative drawings and figures (162 figures) can encourage students to attend biophysical courses. Rather elusive are numerous corrigenda.

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