
Preface

Quantum biology is a wide area of research closely connected with almost all parts of biology. It is based on experimental data of biological sciences and the fundamental laws of physics (de Broglie law of corpuscular-wave dualism of the matter, the conservation laws, including the laws of thermodynamics). At this time, our knowledge in this area is fragmentary. The usual corpuscular biology studies only one plane of living matter organization, the structure and function of which is determined by the DNA-particle. That is why the theory often does not agree with experience, the physics laws don't work. It leads to frequent changes of concepts. Many phenomena (division of living matter into cells, restoration and loss of totipotency of cell systems, etc.) do not find an explanation within the corpuscular theory framework.

This book includes 7 chapters. In Chapter I the insight of a cell as a quantum-mechanical system, an equilibrium system, an open and closed system; the notion of biological harmonic oscillator, as an elementary and indivisible unity of the wave properties of a living matter; the principle and regimes of oscillator work in plants; two internal energy sources and their physical nature; the role of DNA-particles and DNA-wave at different hierarchical levels of living matter organization are discussed. In Chapter II the changes of DNA particles, DNA-waves, the cell physical state, its basic components and physiological functions are analyzed during cell cycle of proliferating plant cell. In Chapter III the corpuscular-wave models of nine types of cell division (mitosis, asymmetric mitosis, activating mitosis, meiosis, activating meiosis, free-nucleus mitosis, endomitosis, cleavage and promitosis) are described. The dependence of the principle of prokaryotic and eukaryotic cell development from its condition is shown in Chapter IV. In Chapter V the hypotheses of physical nature of some fundamental processes of biology (separation of organic peace on a plants and animals; differentiation and evolution of sexual gametes by a sex; etc.) are considered. In Chapter VI the mechanisms and ways of energy protection and the reasons for their change during evolution of plants are discussed. How and why a DNA-particle and a DNA-wave change during reproductive development of generative cells is described on *Pinus sylvestris* L. example in Chapter VII.