Editorial

Within the last quarter century the biological sciences have entered into a qualitatively new evolutionary stage. It is mainly rebuilding of biology on the molecular theory, that has given this era its most distinctive characteristics. This process reminds us to a certain extent of an analoguous development which started more than a hundred years ago, after the cellular theory began to dominate biology. We are the witnesses how also the contemporary revolution in the biological sciences has brought about qualitative changes not only in the informational content of the biological sciences, but also in the impact of biology on the needs of the society.

From the methodological point of view, the most significant consequences of the molecular theory are represented by far reaching unification of the sciences dealing with living nature. This is manifested in the unveiling of previously unknown and unpredicted relations among the biological phenomena and processes at various levels of organization of the living matter, as also among the biological disciplines themselves.

However, the rebuilding of the biological sciences upon the molecular theory does not mean the reduction of biology to molecular biology. Nor was this so when biology, including physiology, was rebuilt on the cellular theory. This follows, finally, from the goal of the biological sciences, it means to discover the laws which are valid at the appropriate levels of organization of the living matter.

An inseparable constituent of the investigation of physiological functions and biological phenomena are their evolutionary parameters. To know a function means also to see it in its development. This follows from the basic theory of biology, i.e., from the theory of evolution. The rebuilding of the biological sciences on the molecular theory markedly deepens this evolutionary view, as it is already testified by the achievements of the contemporary evolutionary and genetical physiology.

The conception of the journal is based on these fundamental premises. The journal will thus publish papers dealing with physical and chemical processes in living systems which clarify, or enable to understand, both the course and the mechanisms of physiological functions on their relevant unit level. The complexity of organization of the living matter can therefore markedly vary; it may be expected, however, that papers on the cellular, subcellular and molecular levels will be prevailing.

The title of the journal expresses this conception only indirectly and incompletely by connecting the well-defined names of two relatively clear-cut scientific disciplines of general physiology and biophysics. This may be understood as the

definition of the aim and of the starting point, or as the delimitation of the scope of the journal. This does not mean, however, the exclusion of biochemistry or of physiological chemistry, nor of functional morphology, from the list of the methodical priorities of the journal.

A significant role in the founding of the journal was played by the acute necessity of a suitable and financially accessible publication forum for this field of biological sciences. We are grateful to the Slovak Academy of Sciences for creating such a forum and giving it at the disposal to the international scientific community.

Jozef Zachar