

Joint Institute for Nuclear Research



**MODERN PROBLEMS OF GENETICS,
RADIOBIOLOGY, RADIOECOLOGY
AND EVOLUTION**

*The Second International Conference
dedicated to the 105th anniversary of the birth
of N. W. Timofeeff-Ressovsky and the 70th anniversary
of the paper «On the Nature
of Gene Mutations and Gene Structure»
by N. W. Timofeeff-Ressovsky, K. G. Zimmer,
and M. Delbrück*

Yerevan, September 8–11, 2005

ABSTRACTS, PAPERS BY YOUNG SCIENTISTS

УДК 577.391(042+091)
ББК 28.071.2я434+28.081.28я434
М78



The contributions are reproduced directly from the originals
presented by the Organizing Committee.
The responsibility for misprints in the report and paper texts
is held by the authors of the reports.

Composed by *V. L. Korogodina* and *B. V. Florko*

Title page design: *V. L. Korogodina* and *B. V. Florko*

Modern Problems of Genetics, Radiobiology, Radioecology and Evolution: Second M78 Intern. Conf. dedicated to the 105th anniversary of the birth of N. W. Timofeeff-Ressovsky and the 70th anniversary of the paper «On the Nature of Gene Mutations and Gene Structure» by N. W. Timofeeff-Ressovsky, K. G. Zimmer, and M. Delbrück (Yerevan, September 8–11, 2005): Abstr., Papers by Young Scientists. — Dubna: JINR, 2005. — 318 p.

ISBN 5-9530-0087-1

The collection contains theses of the reports and competition papers by young scientists presented at the conference. The theses and young scientists' papers are published in the authors' wording.

Современные проблемы генетики, радиобиологии, радиоэкологии и эволюции: Вторая междунар. конф., посвященная 105-й годовщине со дня рождения Н. В. Тимофеева-Ресовского и 70-летию публикации статьи Н. В. Тимофеева-Ресовского, К. Циммера и М. Дельбрюка «О природе генных мутаций и структуре гена» (Ереван, 8–11 сентября 2005 г.): Аннот. докл. и статьи молодых ученых. — Дубна: ОИЯИ, 2005. — 318 с.

ISBN 5-9530-0087-1

Сборник содержит аннотации докладов, представленных на конференцию, а также короткие исследовательские статьи, включенные в конкурс молодых ученых в рамках конференции.

Издание представляет интерес для специалистов в области генетики, радиобиологии, радиоэкологии и эволюции.

УДК 577.391(042+091)
ББК 28.071.2я434+28.081.28я434

BIOSPHERE AND HUMANITY: FROM IDEAS OF N.W.TIMOFEEFF-RESSOVSKY UP TO PROBLEMS OF MODERNITY

N.G.Gorbushin

The N.W.Timofeeff-Ressovsky Scientific Society "Biosphere and Humanity", Obninsk, RF

Creative environment of Obninsk was favourable to crystallization of N.W.Timofeeff-Ressovsky's ideas in inexhaustible area of research on Biosphere and Humanity (1968). For today the ideas have not been realized to the full yet. Their essence is formulated as « ... in terms of physics biosphere of the Earth is open thermodynamic system. ... It is an essential component of general life of the Earth as planet and power screen between the Earth and Space and that film, which transforms the certain part of space energy, mainly solar one in valuable high-molecular organic substance, ... it forms also balanced atmosphere composition, and solutions composition in natural waters, and it creates energy of our planet through atmosphere ... Careless attitude to biosphere results in disturbance of proper atmosphere functioning, it means, that people in improper biosphere cannot live on the Earth ". He has united diverse processes into unified system of knowledge: - "energetic entrance into biosphere in the form of a solar energy - biological circulation of biosphere - leaving the biosphere for geology". The main sense of the offered triad is in understanding of mechanisms which increase efficiency of biosphere.

The strategic importance of the problem and its complicated analysis leads to the necessity of creation of uniform and adequate language for the formal description of observable processes. We could create the first version AIE on a complex problem "Biosphere and Humanity" (N.G.Gorbushin, 2003) on the basis of concepts and senses in area biospherology. It becomes clear, that AIE, generated on the basis of conceptual - semantic images, promote perfection of the mechanism of thinking of natural intelligence in understanding and decision of problems coevolution of biosphere and humanity. The property of biosphere, shown as the power screen - converter in system Space - the Earth, causes biosphere-power strategy of thinking and development of Humanity. This idea forms global complete system as a triad "society-political - socio-economic - information-power processes". Understanding of mechanisms and the realization of technology of interaction of elements of this triad will supply development N.W.Timofeeff-Ressovsky's ideas in the field of biosphere and humanity XXI of century.