

Joint Institute for Nuclear Research



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

dedicated to centenary of N.W. Timofeeff-Ressovsky

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ABSTRACTS

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The Collection contains Theses of the reports presented at the Timofeeff-Ressovsky Centennial Conference dedicated to problems in Genetics, Radiobiology, Radioecology, Self-Organization of Matter and Biological Evolution. The Theses are published in the authors' wording.

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The book is composed by Korogodina V.L., Zyuzikov N.A.

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The general or the theoretical biology can not be created without formulating of main principles characteristic of all living objects. Such axiomas should follow from the physical laws. In 1982-84 I have proposed the system consisting of 5 axiomas which could be the base for all rules and tendencies of living nature. Here are there axiomas:

1. All living organisms posses phenotype and genotype (genetic hereditary programme) - the axioma by A.Weismann, A. von Neimann.
2. Genotypes (genetic programme) are transformed from generation to generation by matrix principle - the axioma by N.K.Koltsov.
3. During the transmission of hereditary information in generations it changes in an indirected, unpredicted way and may be adaptive or accidental - axioma by Ch.Darwin and N.V.Timofeev-Resovski.
4. During phenotype development these changes increase termodinamically in million times - the axioma by N.V.Timofeev-Resovski.
5. Such multiplied changes of genotypes are the object of natural selection - the axioma by Ch.Darwin.

Consequently, N.V.Timofeev-Resovski took a part in formulating of the third rule and proposed the fourth one, that solved in the case of living nature the Maxwell phenomenon's contradictions. This is why he should be mentioned among founders of the general or the theoretical biology like Weismann, Koltsov and Darwin.