

Delbrück's Publications in Biology

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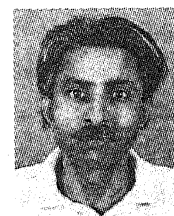
Max Delbrück (1906–1981) was a German theoretical physicist who, stimulated by the speculations of Niels Bohr on the nature of life, developed an abiding interest in biology. After moving to the United States in 1937 he went on to become one of the most influential biologists of his time. The aim of this article is to survey a set of Delbrück's publications in biology. Most of them fall in the area of molecular biology, the field that he was instrumental in founding. The selection is subjective but not unrepresentative. Matters of related interest are highlighted in the boxes; these include a few items of historical and biographical information and can be read independently. The article ends with an overview.

Molecular Biology

On the Nature of Gene Mutation and Gene Structure (1935).

Ever since the rediscovery of Mendel's laws of heredity in 1900, the science of genetics had flourished in spite of the fact that no one knew exactly what genes were. There were hints: genes were associated with chromosomes, chromosomes were rich in nucleic acid, and nucleic acid appeared capable of transforming non-virulent bacteria into virulent forms. Muller had shown in 1928 that X-rays could cause mutations, meaning hereditary changes in genes. But how did the X-rays do this? An answer was provided in this work, carried out in Berlin by Timoféef-Ressovsky, Zimmer and Delbrück. Delbrück provided the theory. It was his first publication in biology and was announced as 'representing a cooperation between genetics and physics'. The experimental results, in particular the manner in which the outcome depended on the dose of the radiation, were explained by a simple hypothesis.

The hypothesis, which came to be called 'target theory', was that



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