Salvador Edward Luria Biography

Salvador Edward Luria

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Biography

Salvador Luria was born on August 13, 1912, in Turin, Italy. In 1929, he entered medical school there and soon developed a technical facility for culturing cells; that is, he was able to grow cells in artificial media inside culture dishes. He received a medical degree in 1935 and then served in the Italian Army for three years. After this service, he studied at the Curie Institute in Paris, where he became curious about bacteriophages, viruses that attack bacteria. He was especially interested in how X-ray radiation affects bacteriophages by causing mutations. Luria emigrated to the United States in 1940 and accepted an appointment to Columbia University. He met Max Delbruck shortly thereafter, and the latter invited Luria to carry on research at Vanderbilt University in Nashville, where Delbruck was teaching.

Together, Luria and Delbruck planned a series of experiments to study bacteria that had developed resistance to bacteriophages. They wanted to see if the resistance was the result of some action by bacteriophages on normal cells, or if the bacteria had become resistant because of mutation. Luria's ideas about random mutation were inspired by an unlikely source--watching people play slot machines at a country club dance during Luria's tenure at Indiana University in Bloomington. He observed how the payoff from a slot machine varied from just a few coins to a big pile of coins, a rather rare occurrence. Luria likened the bacteria to slot machines. Sometimes there were small clusters and sometimes large clusters, probably the descendants of a mutation. Luria's idea led to the development of the fluctuation test, which, with Delbruck's mathematical analysis, demonstrated that the bacterial resistance was an adaptive response caused by spontaneous, random mutation.

Luria and Delbruck began to collaborate with Alfred Hershey, a biologist also conducting bacteriophage research. The three became members of the "Phage Group," an informal assembly of scientists who worked exclusively with seven strains of bacteriophage so that their experimental results could be compared. Luria's research contributed a great deal to the understanding of the structure of viruses. This work was recognized in 1969, when Luria, Delbruck, and Hershey shared the Nobel Prize in physiology or medicine.

Luria had married Zella Hurwitz, a psychology professor, in 1945. They had one son. Luria died at home in Lexington, Massachusetts, after suffering a heart attack in 1991.