Enrico Fermi

1901 - 1954

Awarded the Nobel Prize for Physics in 1938

Enrico Fermi was born in 1901 in Rome. His father, Alberto Fermi, was a railway administrator. Alberto married Ida De Gattis, a woman fourteen years his younger, a teacher in an elementary school. They had three children, Enrico being the youngest. He was small for his age and not very attractive in appearance. It is said that he 'never combed his hair'. In school he did not do well in writing, but he was very interested in mathematics.

Enrico was still a schoolboy when he met Adolfo Amidei, his father's colleague. Amidei gave Enrico a few mathematical problems to work on, stating that they were certainly above his level and that he did not expect him to solve them. But the boy did. He asked for harder ones and succeeded here too. Amidei lent Enrico books on mathematical principles and the basics of physics.

Following his advice, Enrico entered the Scuola Normale Superiore, the institution for outstanding students in Pisa in 1918. It was the happiest time of his life. He easily remembered whatever new notions were exposed in the classroom. He and his friend Franco Rasetti had much time for the pleasures of student life and jokes. One particular joke they played was ***'placing a pan of water on a door left ajar which gave a shower to the person going through'***. There was no heating in the Scuola Normale. 'In winter one had to fight against the cold, in summer one fought against the mosquitoes'. It is said that Enrico was one of the best 'mosquito-killers' around.

Certainly, Fermi learned much physics there. The teacher of physics gave students a 'free hand' in his laboratory. Soon, Enrico with his friend knew much more physics than their teacher, and they gave a course of lessons on Einstein's relativity to him.

A slow neutron is easily captured by a nucleus - just like a slow golf ball...

In July, 1922, Fermi received the degree of Doctor of Physics. His thesis consisted of a paper on his experimental work with X-rays. While a lecturer at the University of Florence in 1924-1926, Fermi extended Pauli's principle of exclusion to a perfect gas. He stated that '***there can be only one atom in each of the quantum states possible for the atoms of an ideal gas'.*** From this followed an entirely new statistical distribution of all such particles, including electron in solids.

In 1927 Fermi became Professor of Theoretical Physics at the University of Rome. In 1933 Fermi accounted for the beta-decay type of radioactivity, whereby ***a neutron changes into a proton with the creation of an electron and a neutrino***. Using the method of bombarding nuclei with neutrons, ***he discovered more than 43 new artificial radioactive isotopes***. For this work, and the discovery of nuclear reactions induced by slow neutrons, Fermi received the 1938 Nobel Prize.

After the Nobel ceremony Fermi and his family did not return to Fascist Italy but went instead to the United States of America. In the early 1940s, Fermi was head of the group at the University of Chicago which developed the first nuclear reactor - the basis for the atomic bomb.

Fermi married Laura Capon, the daughter of an admiral in the Italian Navy; they had a daughter Nella and a son Giulio. Laura accompanied her husband everywhere, and she stayed with him at Los Alamos - the place where the atomic bomb was constructed.His unusual physical strength enabled him to hike, play, swim and ski. Students found Fermi an inspiring teacher and a warm person. He died at the early age of 53.

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He married an admiral's daughter

His work contributed to the first atomic bomb