Peter Leonidovich Kapitza

1894 - 1984

Awarded the Nobel Prize for Physics in 1978

The name Kapitza is connected with the discovery of a very surprising phenomenon in physics: ***superfluidity.***

Kapitza found out that a fraction of the liquefied gas, helium, at a temperature below 2.174 K (or -270.976°C) had almost no ***viscosity***. The superfluid helium displayed such unexpected properties as the ability to escape from an open vessel by forming a thin film and climbing up the inside of the vessel and down the outside of it.

Peter Leonidovich Kapitza was born in 1894 in Kronstadt, Russia. His father was a military engineer and his mother was an exceptionally well educated person.

In 1905 Peter Kapitza entered a gymnasium but was soon expelled for poor progress. Then he entered another college and in 1912 he graduated from it with distinction, a grade that allowed him to enter St. Petersburg Polytechnic Institute.

In 1914, when World War I broke out, Kapitza was mobilized and served as a hospital driver on the Polish front. In 1916 he returned to his studies. His first scientific article was devoted to the method of making the thinnest quartz threads for physical equipment. The method was to use a bow and arrow. The arrow's tip was first put into melted quartz, the arrow was then shot out, and the quartz, drawn by it, thinned and solidified in flight. The tendency to find simple and original solutions was characteristic of Kapitza. In 1918 Peter graduated from the Institute and stayed there as a teacher.

In 1920 great misfortune fell on Kapitza: during the same month he lost his father, his wife and his two children. He was dreadfully distressed. In order to distract him from grim thoughts the institute sent him on business to Germany and England.

Kapitza served as a hospital driver in World War 1

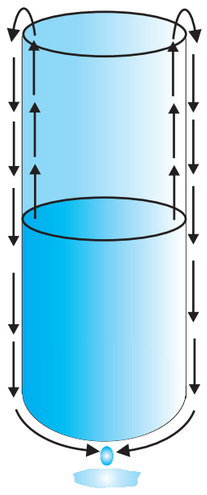
During his visit to Cambridge University Kapitza was given a job at the Cavendish laboratory which at that time was headed by the famous physicist Rutherford. Among the young physicists working in the laboratory Kapitza was one of the most prominent; his fantasy and talent as a physicist and engineer aroused delight in Rutherford. In 1923 Kapitza defended his PhD thesis and received a 3-year Maxwell scholarship which was granted to the best graduate in the laboratory. Kapitza was a very good mixer, he was interested not only in various problems of science but also social life, art and mankind.

In 1926 Kapitza married Anna Krylova, they had sons, Sergei and Andrei. In 1929 Peter Kapitza was elected to the USSR Academy of Sciences and as a member of the Royal Society. After 1926 Kapitza regularly visited the USSR, to give lectures and reports. **But in 1934 the Soviet authorities forbade him to leave the USSR.** In 1935 Kapitza was made director of a newly founded research institute in Moscow - the Institute for Physical Problems. The main equipment was provided by Rutherford and brought from Cambridge.

In 1946 Kapitza was dismissed from his office, it is thought, for his unwillingness to work on nuclear weapons. He left Moscow for the country. The first months were very difficult, he was ill and distressed, but later on he was able to take himself in hand. In his house he arranged a laboratory and resumed his research. In spite of everything Stalin kept writing to Kapitza and he did not lose interest in what Kapitza was doing and his opinions.

It was only in January 1955 that Kapitza was able to return to his Institute. In 1978 Kapitza was awarded the Nobel Prize for Physics. Kapitza's achievements are recognized all over the World. He was a member of about 30 academies and many scientific societies.

T.K.



He found that superfluid helium displayed unusual properties

Kapitza had a 'hot line' to Stalin...which he used to save the lives of some scientists