

*ON THE FIFTIETH ANNIVERSARY OF THE DEATH OF P. N. LEBEDEV*

Usp. Fiz. Nauk 77, 569-570 (August, 1962)

PETR Nikolaevich Lebedev, one of the foremost scientists of pre-revolutionary Russia, passed away on March 13, 1912. He was a brilliant, indeed, a virtuoso experimenter whose investigations exhausted the technical possibilities of his day; yet at the same time he was an outstanding theoretician. He rendered great services to physics, in investigating millimeter electromagnetic waves, the pressure of light on solids and gases, and the magnetism of rotating bodies, performing his remarkable experiments with the modest and, from the modern point of view, inadequate, equipment available to the experimental scientist at the end of the last and the beginning of the present century. But while the experimental techniques of his day afforded him but crude tools for investigation, he more than made up for this drawback, by his enormous intuition, his brilliant ingenuity and a number of other traits which are not readily definable but which, taken together, constitute what we call talent or genius. In addition, he advanced profound ideas on the nature of such physical phenomena as intermolecular forces and the origin of comet tails. This is but a brief list of Lebedev's best-known works, any one of which would have sufficed to make a scientist famous. All these brilliant papers are as valid today as they were at the time of publication. Electromagnetic radiation in the millimeter range has acquired great significance in astrophysics with the current advances in radio research and engineering; thanks to the recent develop-

ment of masers, the extremely small forces of the pressure of light, which only Lebedev, with his extraordinary gifts, was able to detect, can now be sensed as powerful forces; successful attempts are being made to use the pressure of light for realizing super-high energy particle accelerators. Lebedev's ideas about the role of ponderomotive effects of waves on resonators serve in new form as the basis for experimental and theoretical investigations into the nature of van der Waals forces.

However, Lebedev's services to science and to his country were not confined to his outstanding scientific discoveries. Owing to his vast and diversified knowledge, owing also to his inexhaustible fund of ideas and his great gifts as a teacher, he drew beginning scientists to him like a magnet. Despite the highly unfavorable conditions of his day, he was able to create the first large school of physics in Russia, a school which has already produced several generations of scientists. This was more than the normal activity of a scientist and professor; it was a heroic feat. That Soviet physics today is in the very forefront of science is due in no small part to the efforts of Petr Nikolaevich Lebedev, whose great work and brilliant personality we still remember with love and respect fifty years after his untimely death.

Translated by Mrs. Valentine S. Rosen