

MOISEĬ IZRAILEVICH KORSUNSKIĬ

(On the occasion of his sixtieth birthday)

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APRIL 19, 1963 marked the sixtieth birthday of Moisei Izrailevich Korsunskii, an outstanding Soviet physicist who has made a valuable contribution to the development of Soviet science.

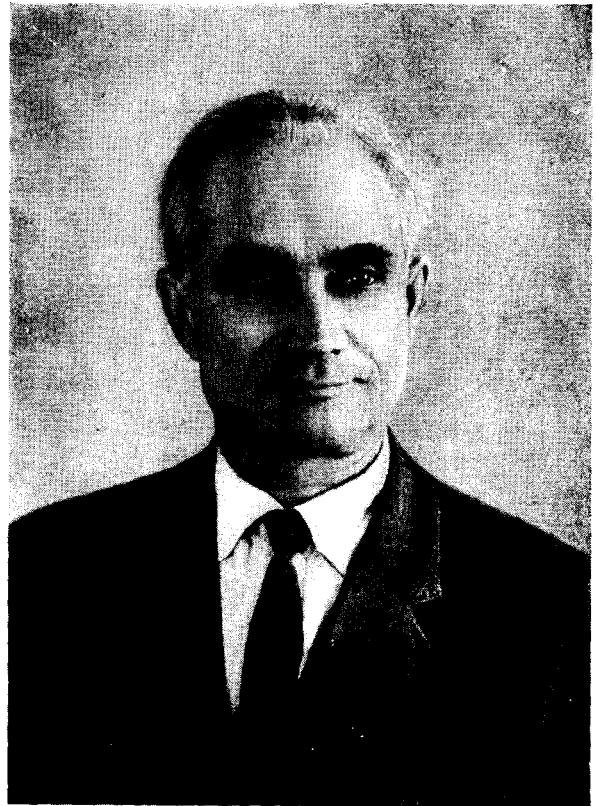
Korsunskii began his scientific career in the Leningrad Physico-technical Institute, first in the laboratory of Prof. N. Ya. Selyakov, then in that of Academician A. F. Ioffe. After graduating in 1926 from the department of mechanics of the Leningrad Polytechnic Institute, Korsunskii set up the first x-ray laboratory for training purposes in the Soviet Union. He combined teaching at the Polytechnic Institute with research work in the Leningrad Physico-technical Institute, where he became a graduate student in 1925. Upon completing graduate work in 1928, Korsunskii was sent to Berlin University to study theoretical physics; he then worked as senior scientist in the Leningrad Physico-technical Institute.

The beginning of Korsunskii's scientific career coincided with the beginning of tumultuous growth of physics in our country. In the space of a few years, new physical-technical institutes were organized in several of our large industrial cities. The first was the Ukrainian Physico-technical Institute in Khar'kov, and it was followed by similar institutes in Dnepropetrovsk, Tomsk and the Urals. To each of them A. F. Ioffe assigned a group of highly qualified scientists from the Leningrad Physico-technical Institute to form the core of the scientific staff.

In 1929 Korsunskii moved to Tomsk, where he was one of the creators of the Siberian Physico-technical Institute. He organized an x-ray and then a nuclear laboratory at the Institute and combined scientific research with lecturing in the Department of Physics and Mathematics.

Korsunskii's first research was devoted to analysis of the chemical composition of substances by means of x-rays, determination of the absolute wavelengths of x-radiation and problems of x-ray optics. He used this research as the basis for the first Soviet monograph on the physics of x-rays. This monograph, "The Physics of X-Rays," published in 1936, was used as a standard reference by many of the scientists who now head x-ray laboratories in our country. His monograph "Neutrons" appeared in the same year.

From May 1934 to 1938 Korsunskii was head of a laboratory at the Leningrad Electrophysical Institute, while also serving as professor of experimental phys-



ics at the Leningrad Industrial Institute.

In 1938, he became the scientific head of the high-voltage laboratory of the U.S.S.R. Academy of Sciences, which later became part of the Ukrainian Physico-technical Institute.

During this period, Korsunskii investigated pulse methods of accelerating charged particles and production of heavy ion currents.

During the Second World War, when the Ukrainian Physico-technical Institute was evacuated to Kazakhstan, Korsunskii contributed actively to the development of non-ferrous metallurgy in Kazakhstan. He was a member of the Scientific-Technical Council of the State Planning Committee of the Kazakh S.S.R. and was twice awarded citations by the Supreme Soviet of the Republic. Upon returning with the Institute to Khar'kov in April 1944, Korsunskii headed its laboratory, while at the same time serving as head of a department at the Cement Institute. In 1952 he was transferred to the Khar'kov Polytechnic Institute, where he headed the Department of General and Ex-

perimental Physics until 1962. In this department there were organized a laboratory for semiconductors, a laboratory for the physics of gas discharges, and an x-ray-spectroscopic laboratory. In 1962 Korsunskii was elected member of the Academy of Sciences of the Kazakh SSR and is today the head of the Physico-technical department of the Academy's Institute of Nuclear Physics.

Korsunskii has published a great deal, on a variety of subjects. He is the author of over 120 articles and several monographs and textbooks.

Many of Korsunskii's papers deal with methods of focusing particles. He and his collaborators developed the principle of a high-luminosity β -spectrometer which is used in the present Ketron-type β -spectrometers.

Through his investigations of the movement of electric discharges in non-uniform electric and magnetic fields, Korsunskii arrived at the possibility of building electrostatic analyzers and high-resolution mass spectrometers.

Korsunskii pioneered in the field of investigation of nuclear isomerism. His work on this subject led to his writing the monograph "Nuclear Isomerism," which was reprinted in the German Democratic Republic in 1956.

He also pioneered in the application of multiply charged ions in nuclear physics. His work on the excitation of ions by charge exchange is regarded as fundamental.

Of great importance are the methods of correcting x-ray emission bands, worked out by Korsunskii and his students. These methods make it possible to determine from x-ray spectroscopic data the nature of atomic bonds in solids and the distribution in states of the valence electrons, and to evaluate such significant parameters as the height of the Fermi level and the widths associated with non-radiative transitions of valence band electrons.

A number of Korsunskii's studies have been devoted to investigation of the photoelectric properties of selenium. These studies culminated in the discovery of a new type of photoconductivity: the response in this case depends not only on the intensity of the incident light but also on its wavelength. Photoresistors employing this principle are therefore spectroscopic rather than photometric transducers. If we add that such semiconductors have good "spectral memory" it will be obvious that the type of photoconductivity discovered by Korsunskii is bound to have many useful applications.

Korsunskii is remarkably good at formulating the most abstruse problems of modern physics. That is why his admirable book for the layman, "The Atomic Nucleus," went through five editions in the U.S.S.R. and has been published in the languages of the Union Republics and abroad.

He is a gifted teacher, able to transmit his great experience and knowledge to his collaborators and to inspire them with his own enthusiasm. He has trained many young scientists, 14 of whom have become candidates of sciences and three have received their doctor's degree.

As head of the physico-technical department of the Institute of Nuclear Physics of the Academy of Sciences of the Kazakh S.S.R., Korsunskii combines fruitful scientific work with considerable organizational activity in developing research on semiconductors and the physics of solids in Kazakhstan.

On the occasion of Korsunskii's sixtieth birthday, the scientific community wishes him good health and further successes in his creative scientific endeavors.

Translated by Valentine S. Rosen