Veniamin Aleksandrovich Sidorov (In celebration of his sixtieth birthday)

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Veniamin Aleksandrovich Sidorov, a talented experimental physicist, celebrated his sixtieth birthday on October 19. His work in nuclear and elementary particle physics is known worldwide. Veniamin Aleksandrovich is well known for his erudition, his excellent knowledge of the current problems in physics, his use of the latest experimental methods, and his ability to organize a large team of physicists and engineers and to direct it most effectively so as to obtain faultless and reliable experimental results.

Veniamin Aleksandrovich was born in the village of Barbarino, Vladimir district, to a working class family. His father died at the front in 1942, leaving his mother Mariya Vasil'evna with two sons, the oldest of which was twelve years old. In 1948 Sidorov entered the famous Physicotechnical Department at Moscow State University. He started his scientific career in 1953 at the I. V. Kurchatov Institute of Atomic Energy. In 1959, at Kurchatov's suggestion, he was sent for one year to the Niels Bohr Institute in Copenhagen.

Veniamin Aleksandrovich Sidorov's first work was devoted to investigations of the energy levels of light nuclei. This work was performed with the help of a fast-neutron spectrometer, which he developed and which was based on time-of-flight measurements. During the same years, in Copenhagen and Moscow, Veniamin Aleksandrovich performed research on the statistical properties of nuclei. The monograph "Spectrometry of Fast Neutrons," which concerns these studies and written later together with B. V. Rybakov, was published in the USA and a number of other countries.

Veniamin Aleksandrovich Sidorov's main work deals with the colliding-beam method. In 1961 he transferred to the Institute of Nuclear Physics of the Siberian Branch of the Academy of Sciences of the USSR, founded by A. M. Budker, and immediately left for Siberia. One of the main problems studied at the new institute was to develop colliding-beam accelerators and to use them for studying elementary particles. The colliding-beam method promised an enormous increase in the effective particle-interaction energy, but at that time, because of the extraordinary technical difficulties, there was great doubt that this method could be implemented. It is enough to say that now, almost thirty years later, colliding-beam accelerators are in operation in the USSR at only one location—in Novosibirsk!

Veniamin Aleksandrovich participated directly in the fundamental and practical development of the colliding-beam method, and in starting up the first accelerators with colliding electron-positron and electron-electron beams. Most importantly he directed the work on the preparation of experiments on these installations. He proposed and developed for experiments methods based on the use of, at that time, new principles for detecting particles with the help of spark chambers. A large series of investigations in high-energy physics was performed at the institute. This work included a check of quantum electrodynamics at small distances, the investigation of vector mesons, measurements of form factors of pions and kaons, the observation and study of double bremsstrahlung, and the discovery of multiple production of hadrons in electron-positron annihilation. The process of electroproduction of electron-positron pairs, which uncovered the possibility of studying photon-photon collisions in colliding electron-positron beams, was first observed under the direction of V. A. Sidorov.

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In the last few years Veniamin Aleksandrovich has directed work on the precise measurement of the masses of φ, ψ, and υ mesons with the help of the method of resonance depolarization of beams which was developed at the institute. The accuracy of the measurements was improved by one to two orders of magnitude! Rare modes of radiative decays of vector mesons, some of which were observed for the first time, for example, the decay $\rho \to \pi^0\gamma$ with a probability of only 0.1%, were also investigated.

A new scientific school of high-energy physics arose in Novosibirsk. At this school V. A. Sidorov was simultaneously a student (of A. M. Budker) and a teacher of the next generation of talented youth. The pioneering work per-

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formed in Novosibirsk and Stanford proved the fruitfulness of the colliding-beam method in elementary-particle physics. Such installations now operate and/or are under construction in practically every laboratory in the world where research in this field is performed. Colliding beams have led to a number of surprising discoveries, which have expanded our knowledge of the nature of elementary particles. We can happily state that V. A. Sidorov has made a significant contribution to firmly establishing the colliding-beam method in high-energy physics.

V. A. Sidorov and his group at the Institute of Nuclear Physics were awarded the Lenin Prize in 1967 for the development of the colliding-beam method. In 1968 Veniamin Aleksandrovich was made a Corresponding Member of the Academy of Sciences of the USSR in the Division of Nuclear Physics. In 1985 V. A. Sidorov was awarded the prize of the Council of Ministers of the USSR for his work on automation of scientific investigations. In 1989 he was awarded the State Prize of the USSR for his work on the precise measurement of the masses of elementary particles with the help of the method of colliding beams.

To the list of first-class research into the physics of elementary particles, performed under the direction of V. A. Sidorov, we can add a few words about his extensive scientific-organizational work, which he performs as the assistant director of the institute, about the training of young scientists, and about his well-deserved prestige in the group. But we do not want to reduce this birthday greeting to a standard list of successes and virtues, in which it is difficult to distinguish one scientist from another.

Veniamin Aleksandrovich is a complicated person. He is an outspoken person, who is accustomed to saying what he thinks, sometimes harshly, especially if the problem is poor work performed by coworkers, lack of organization, or attempts by some directors to take all the credit for their own groups. V. A. Sidorov is equally direct with subordinates and management. But he also calmly accepts but rebukes himself.

In the frank style of discussion adopted at the Scientific Council of the Institute of Nuclear Physics of the Siberian Branch of the Academy of Sciences of the USSR, the straightforwardness, as a rule, does not complicate relations; on the contrary, it is often very useful and helps to make sure that all requirements are met and the best solution is found. Adding to this the fact that V. A. Sidorov is responsible for such complicated questions of our times as finances, the development of computer technology at the Institute, as well as housing problems, then it becomes obvious that his life is not simple.

When the Institute of Nuclear Physics was organized A. M. Budker made great attempts to create an institute with the best working conditions so that scientific research would move ahead successfully. He saw this as the key to the solution of complicated scientific and technical problems. Budker constantly discussed the organizational principles of such an institute with his closest associates. Veniamin Aleksandrovich was always an active participant in these discussions. At the end of the 1960's when the first works of the Institute of Nuclear Physics on colliding-beam experiments received international acclaim, it became clear that A. M. Budker's first goal was achieved. A new type of institute, capable of finding nontrivial ideas and solving the most difficult problems in such a technologically complicated field as high-energy physics, was created in Novosibirsk. We happily call attention to the great role which Veniamin Aleksandrovich Sidorov played in the creation of the Institute of Nuclear Physics.

V. A. Sidorov is currently directing new experiments. Experiments on the newly updated VEPP-2M assembly will already begin next year. For this, a spherical neutral detector is being constructed. This detector will make it possible to study further even less likely modes of radiative decays of vector mesons and to measure the cross section for the production of hadrons outside the resonance region. A new detector with a magnetic field (KEDR) is under construction. This is the largest detector at our Institute. Extensive research into the properties of b-quarks and the study of two-photon processes will be performed on the VEPP-4 updated setup with the help of the KEDR. There is no doubt that his talent as an experimental physicist, his persistence, and his firmness of purpose will allow Veniamin Aleksandrovich Sidorov to successfully carry out new research into elementary-particle physics.

We warmly congratulate Veniamin Aleksandrovich on his birthday and wish him health, happiness, and new scientific successes.

Translated by M. E. Alferieff