we hear that

with Imperial College since 1949, when he became a reader in electronics there. From 1934 to 1948 he worked with British Thomson-Houston, UK.

At the University of Utah **Karel V. Kuchař**, of Princeton University, has been appointed associate professor of physics. **Franz E. Rosenberger** has been promoted from research assistant professor to assistant professor.

Charles E. Johnson, a former research physicist at the Lawrence Radiation Laboratory, has been appointed assistant professor in the physics department at North Carolina State University.

Newcomers in the theoretical division at Los Alamos Scientific Laboratory include **Arnold J. Sierk**, of the California Institute of Technology, and **Talmadge R. England**, formerly with Westinghouse Electric Bettis Atomic Power Laboratory in West Mifflin, Pennsylvania. Recent appointees in the physics division are **Gary J. Russell**, of the University of Wisconsin, Madison, and **Robert B. Howell**, of the University of Texas, Austin. **Barry S. Newberger**, of Princeton University, has joined the theoretical design division.

obituaries

L. A. Artsimovich

Lev Andreyevich Artsimovich died in Moscow on 1 March at the age of 64. Director of the Kurchatov Institute of Atomic Energy, member of the Presidium of the Academy of Sciences of the USSR and Academician-Secretary of its division of general physics and astronomy, president of the National Committee of the International Union of Pure and Applied Physics, delegate on the Council of the European Physical Society, president of the National Committee of Soviet Physicists, member of the Commission on Disarmament Problems of the Presidium of the USSR Academy of Sciences, and member of the International Continuing Committee of the Pugwash Conferences on Science and World Affairs, Artsimovich had for almost two decades played a pivotal role in the internal development of Soviet science and its growing international involvement.

Artsimovich's interests spanned many branches of physics including x rays, slow-neutron physics, interactions of fast electrons, positron annihilation, magnetic bremsstrahlung, ion and electron optics, electro-magnetic isotope separation, and gas discharges. For the last 20 years his main scientific interest was in the physics of high-temperature plasmas.

His approach in this field was that of an inquisitive, no-nonsense experimentalist, looking for the simplest technological solutions that would allow him to isolate an important set of phenomena, heedless of the fashions that at any one time may have swept the interested scientific community. Under his guidance the Kurchatov Institute had its first major breakthrough in 1962 when, by applying the so-called Joffe bars onto an open-ended confinement configuration (a magnetic mirror), the first experimental realization of a magnetic wall was achieved and the particle confinement time was increased by several orders of magnitude.

In the field of closed magnetic confinement systems he pursued the investigation of the simplest configuration that could be realized, a two-dimensional toroid in which the confining magnetic field is generated by the current induced in the plasma itself. This current produces ohmic heating of the plasma at the same time. The series of toroidal machines developed at the Kurchatov Institute and incorporating this concept have been called "Tokamaks." As early as 1965 Artsi-

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movich reported on the outstanding properties and the high electron temperatures of the plasmas which had been obtained in the Tokamak devices. However, the adopted diagnostic methods, on the basis on which his report was based, were deemed too crude by most of his Western colleagues and Artsimovich's message was not accepted. Yet when some of us had the opportunity to spend time at his Institute in 1967 and to discuss all the pieces of information that had been put together to identify the plasma regimes that were achieved in the T-3 and TM-3 Tokamaks, it became apparent that Artsimovich's report had a solid foundation. In spite of this the atmosphere of skepticism on the Tokamak results was not completely dispelled (We still remember some his days of discouragement during his stay with us at MIT in early 1969.) even up to the time of the Dubna Conference in November 1969, when an independent set of measurements obtained at the Kurchatov Institute by a British team revealed that the plasma parameters achieved in the T-3 Tokamak device were even better than those claimed by Artsimovich and his colleagues.

At the time of his death he was working on improvements, both in the method of plasma heating and in the magnetic configuration shape, that he hoped would eventually succeed in bridging the final factor of 10 in ion temperature separating the existing Tokamaks from the level required for thermonuclear power production. Although Artsimovich was certain that the conditions for controlled thermonuclear reactions could be attained in the laboratory, he nevertheless was equally certain that its practical application would not happen in his lifetime—that this was still 10–20 years away—because the solution of a problem of such great technological difficulty could not be achieved without a better understanding of the basic physics of all the processes involved.

But his interests in science far transcended the field of plasma physics. He was a major driving force in the Soviet Academy in support of fundamental research, especially in various branches of modern astronomy and astrophysics, believing that only through deep and effective involvement in such frontier fields would Soviet science be able to achieve a position in the forefront of modern world science. He was a conscientious and devoted teacher, as proud of the popularity of his courses in plasma physics and ion optics as of his scientific achievements. As a science administrator he fought a vigorous and continuing battle to break down the traditional system of control over science by the authoritarian "herr Professor," insisting on mandatory early retirement of laboratory heads and the establishment of direct mechanisms for bringing young scientists into positions of authority as early as possible.

Lev Artsimovich was a gentle man, but with a sharp, acerbic wit that could not tolerate fools. He believed in the future, despite a short-range pessimism that was easily mistaken for cynicism on first encounter. He was a loyal citizen of his country, but believed that it could learn a great deal from the rest of the world. He worked for open international intercourse of all kinds, not only because he believed that international cooperation is good for science, but also because he believed that increased international exchanges tend to make the world a safer place, and finally because he could not conceive that others would not enjoy travel and variety as much as he did.

Artsimovich's role as Soviet scientist, Academician and member of the Russian intelligentsia was a seminal one. He made major contributions to the postwar development of Russian science and to its evolution in the direction of greater openness and more freedom.

He was among the best known of contemporary Russian scientists, not only for his scientific work but also as a personal friend of the large numbers of colleagues who met him at scientific and Pugwash conferences. Lev Artsimovich leaves behind a host of friends and admirers in the West as well as in the Soviet Union.

BRUNO COPPI
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Burton Jones Moyer

Burton Jones Moyer, professor of physics at the University of California in Berkeley (1947–71) and Dean of the College of Liberal Arts at the University of Oregon (1971–73) died in Eugene, Oregon on 21 April. He was known and respected by high-energy physicists and health physicists the world over.

Moyer was born in 1912 in Greenville, Illinois, where his father was professor of chemistry at Greenville College, a small denominational institution. He did undergraduate work and received his AB at Seattle Pacific College, where his father was then Dean. He completed his PhD in physics at the University of Washington in Seattle in 1939. He was greatly influenced by his parents, both deeply religious persons. The guiding motive of his life was service, service to his fellow men