Andrey Stanislavovich Borovik-Romanov FREE

Alexander F. Andreev; Vladmir V. Dmitriev; David M. Lee

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nuclear weapons had saved in excess of one million lives by avoiding an invasion of Japan. More than 10 years ago, he argued that nuclear testing was no longer necessary to ensure the safety and reliability of nuclear weapon stockpiles. This view, at first quite unpopular, has now prevailed in almost all sectors of our society. It is a fitting tribute to one of the great among us.

GLENN T. SEABORG
Lawrence Berkeley National Laboratory
Berkeley, California

Andrey Stanislavovich Borovik-Romanov

Andrey Stanislavovich Borovik-Romanov, a distinguished Russian physicist, died on 31 July 1997 in Cairns, Australia.

Andrey was born on 18 March 1920 in Leningrad. He began studying physics at Moscow State University in 1938, but his education was interrupted when he joined the Soviet army in World War II.

After the war, he returned to his studies and received a diploma in physics (the equivalent of a master's degree) in 1947. He then joined the Institute of Metrology in Moscow, where he spent several years, earning his candidate's degree (the equivalent of a PhD) there in 1950.

In 1956, Andrey was invited by Peter Kapitza to join the Institute for Physical Problems (now known as the Kapitza Institute for Physical Problems). Andrey spent the remainder of his career—and certainly the most fruitful part of his professional life—at the institute, serving as vice director (1963–84) and director (1984–91). After 1991, he continued to work at the institute.

A. S. BOROVIK-ROMANOV

Andrey will be remembered most for his research in the fields of magnetism and low-temperature physics. He first worked on the static magnetic properties of antiferromagnets in 1955. He discovered weak ferromagnetism in antiferromagnets in 1956 and suggested that the phenomenon could be explained by the noncollinearity of spins. That idea stimulated intense theoretical studies, which finally resulted in a comprehensive theory of weak ferromagnetism.

Andrey also observed piezomagnetism in some of the antiferromagnets in 1959 and investigated their spin dynamics. In particular, he generalized the theory of spin waves for weak ferromagnets, calculated and measured spin-wave spectra in particular kinds of antiferromagnets and observed the parametric excitation of spin waves in antiferromagnets in 1969.

In 1973, he also undertook magneto-optical studies of antiferromagnets and later observed inelastic scattering of light by spin waves and phonons. For these important contributions to the physics of magnetism, Andrey received the Lomonosov Prize from the USSR Academy of Sciences in 1972, the same year he was elected to membership in the academy.

At the end of the 1970s, Andrey changed his area of research. He initiated the construction of the first nuclear demagnetization cryostat in the USSR for studies of quantum liquids at superlow temperatures and became the leader of a research group that, in 1982, began nuclear magnetic resonance studies of superfluid helium-3. Although a full decade had passed since the discovery of superfluid ^{3}He, Andrey and his research group still obtained a number of exciting new results concerning the spin dynamics of superfluid ^{3}He. Their results included the macroscopic transport of spin due to spin supercurrents, spin analogs of the Josephson phenomena and phase slips and a new dynamical homogeneously precessing domain maintained by spin supercurrents. Andrey's group demonstrated that all these effects, although occurring in a spin system, have deep connections with superconductivity and superfluidity. For this work, Andrey was awarded the Russian State Prize in 1993.

Andrey was an outstanding physicist, as well as a great educator and organizer. He gave lectures at the Moscow Institute of Physics and Technology and was a mentor for many students. Until the end, he worked as an editor of the principal Russian physical journal, *Journal of Experimental and Theoretical Physics*. He was the founder of *JETP Letters*.

Although Andrey often called himself a lucky man, his luck was really the result of hard work and optimism, which helped him to overcome many difficulties. He was a good man, and his honesty, kindness and politeness were an example to all of us. He is missed and will be remembered by colleagues all over the world.

ALEXANDER F. ANDREEV
VLADMIR V. DMITRIEV
Kapitza Institute for Physical Problems
Moscow, Russia
DAVID M. LEE
Cornell University
Ithaca, New York

Albert Louis Latter

Albert Louis Latter, one of the most influential scientists within the US defense establishment for more than 30 years, died at his home in Pacific Palisades, California, on 8 June 1997. He was 76.

Born in Kokomo, Indiana, Latter earned a BA at UCLA in 1941. Ten years later, at a time when the fields of nuclear energy and nuclear explosives were under rapid development and growth, he earned his PhD—also at UCLA—in nuclear physics, after which he immediately left to join the Rand Corp in Santa Monica, California.

For the next 20 years, he worked on many aspects of nuclear weapons, their effects and the weapons systems that employed them or were meant to survive them. Shortly after joining Rand, he, along with several other Rand physicists, participated in the establishment of the Atomic Energy Commission's laboratory at Livermore, California (later to become Lawrence Livermore National Laboratory). Over the next three decades, Latter worked with many of the lab's leaders and was credited with a number of nuclear weapons concepts, which he was also instrumental in developing.

In 1960, Latter was named head of the physics department at Rand, where he was active in designing and planning the basing of US intercontinental ballistic missiles (ICBMs), with emphasis on their surviving nuclear attacks on their silos. Latter contributed to the understanding of sophisticated warheads for missiles, particularly those known as MIRVs (multiple independently targeted reentry vehicles) for use against hardened ICBM bases and antiballistic missile (ABM) defenses.

Concerned about the possible hiding or muffling of nuclear tests, Latter led a Rand team that studied the issue. The summary of their report, which appeared in 1959, began: "It is shown theoretically that nuclear explosions