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(*b*. Odessa, Russia, 5 December 1909; *d*. Moscow, U. S. S. R., 30 December 1978)

mathematics.

Naimark was the son of Aron lakovlevich Naimark, a professional artist, and of Zefir Moiseevna Naimark. He showed his mathematical talents at an early age; and from 1924 to 1928, studying independently, he completed a university course in mathematical analysis. In 1929 he enrolled at the Odessa Institute of National Education, and four years later was admitted to graduate study (*aspirantura*) at Odessa State University under the direction of Mark G. Krein. On 1 June 1932 he married Larisa Petrovna Shcherbakova; they had two sons.

Naimark defended his candidate's thesis (roughly corresponding to the U. S. doctoral dissertation) in 1936. Two years later he moved to Moscow. In 1941 he received the doctorate (often called the "big" doctorate) from the Steklov Mathematical Institute and was immediately appointed professor at the Seismological Institute of the U. S. S. R. Academy of Sciences. When the Soviet Union entered World War II. Naimark embarked upon military work, spending eighteen months in Tashkent with the evacuated Seismological Institute. He worked at a number of institutes, including the Institute of Chemical Physics and the U. S. S. R. Academy for the Arms Industry, after returning to Moscow when the war was over. In 1954 Naimark became a professor at the Moscow Physical-Technical Institute, and in 1962 he was appointed professor at the Steklov Mathematical Institute, a post he held until his death.

Naimark's life was governed by total dedication to science that led to a large scientific output. Nevertheless, he found time to read Western writers in their original languages and to follow developments in the fine arts. He was a skillful painter and knew a great deal about music.

During his early career Naimark carried a heavy load of classroom teaching. In later years he taught only graduate courses and guided the research of his many students. In the 1960's he traveled widely; in 1967 he made a lecture tour through Canada that did much to further contacts between Soviet and Western mathematicians. During his last ten years Naimark suffered from heart disease but bore his affliction with grace and humor. When too ill to sit up, he dictated mathematics to his wife.

Naimark's first mathematical writings were joint papers with Krein, mostly on the separation of roots of algebraic equations. After his arrival in Moscow, he was at the forefront of functional analysis and group representations, two fields that were in a state of rapid ferment in the Soviet Union and else where. (He is, in fact, justly considered one of the founders of functional analysis and group representations.) His most famous early contribution was the elaboration of the classical Gelfand-Naimark theorem (1943), which showed that norm-closed self-adjoint algebras of operators in Hilbert space can be described by a few simple axioms that in the commutative case serve to characterize the algebras of all continuous complex-valued functions on compacta. Also in 1943 he published his generalization to locally compact abelian groups of John von Neumann's spectral theorem. In 1950 Izrail M. Gelfand and Naimark published their important treatise on irreducible unitary representations of the classical matrix groups. In this work they explicitly obtained a large number of these representations—enough, in fact, for Plancherel's theorem for these groups. Their results strongly influenced J. Michael G. Fell's work on group representations done in the 1950's and 1960's, and opened the way for Harish-Chandra's definitive work on Plancherel's theorem, done from about 1953 to about 1970. (But the irreducible unitary representations have not yet been obtained explicitly.)

Naimark also made fundamental contributions to the theory of non-self-adjoint operators in Hilbert spaces, to the theory of Banach algebras with involution, and to the theory of representations of groups and algebras in inner product spaces bearing an indefinite metric. His scientific oeuvre consists of 123 research papers and 5 books.

Naimark's books are models of lucidity, completeness, and scholarship. His *Normirovannye koltsa* (Normed rings, 1956) has gone through three editions and has been translated into German, French, and English. His *Lineinye differentsialnye operatory* (Linear differential operators, 1954) also has gone through several editions and translations. His last work, written with A. I. Shtern while he was gravely ill, is *Teoriya predstavlenü grupp* (Theory of group representations, 1976). This book, which also appeared in French and English, is both a text book and a vade mecum on the theory of Lie groups and their finite-dimensional representations.

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II. Secondary Literature. An obituary by Izrail M. Gelfand and others appeared in *Uspekhi matematicheskikh nauk*, **35** no. 4 (1980),, 135–139, English trans. In *Russian Mathematical Surveys*, **35** , no. 4 (1980), 157–164. See also the article in honor of Naimark's fiftieth birthday in *Uspekhi matematicheskikh nauk*, **15** , no. 2 (1960), 231–236, English trans. By W. F. Lunnon in Russian Mathematical Surveys, **15** , no. 2 (1960), 169–174.

Edwin Hewitt