

## In memory of Mikhail Vasil'evich Terent'ev

September 26, 1996 was the last day in the life of Mikhail Vasil'evich Terent'ev, a talented theoretical physicist — an irreplaceable loss for science and for all those who knew him.

Mikhail Vasil'evich was born into the family of a civil servant in 1935. Until his last day, his career was non-separable from the Institute of Theoretical and Experimental Physics (known as ITEF for short in Russian). He was assigned there in 1959 immediately after he had graduated from the Moscow Engineering Physics Institute where he studied under Vladimir Borisovich Berestetskii. In 1962, Mikhail Vasil'evich presented his dissertation, *Some Aspects of Dispersion Techniques in Perturbation Theory*, for which he obtained a candidate of sciences degree. Among other things, it reproduced in dispersion techniques the result for the anomalous magnetic moment of the electron in two loops. In 1973, he was awarded a doctorate for his doctoral dissertation, *Studies of the Electromagnetic Properties of Elementary Particles*, where he described the scattering amplitudes of particles at low energies.

Mikhail Vasil'evich found special attraction in challenging difficult problems — he devoted all of himself to them and solved them. It would have taken too much time and space to list all the results he obtained. We will touch only a few. In 1963, he proved the nonrenormalization of the vector coupling constant. This result was re-discovered by Ademollo and Gatto a year later. As early as 1965, Mikhail Vasil'evich (with V S Vanyashin) discovered a 'wrong' sign in the contribution of charged vector bosons to the vacuum polarization of the electromagnetic field, thus anticipating the theoretical discovery of asymptotic freedom in non-Abelian gauge theories. Using the anomalous Ward identities, he obtained classic results in the physics of soft pions. Equally widely known are his results on the relativistic quark model. In his last years, Mikhail Vasil'evich turned to supergravity.

From 1976, he was the executive secretary of the journal *Yadernaya Fizika* (Sov. J. Nucl. Phys.). More recently, already severely ill, Mikhail Vasil'evich took to lecturing on the physics of elementary particles at the Moscow Engineering Physics Institute, and did this with enthusiasm. From 1990 to 1994, he was the secretary of the Scientific and Technical Council of the ITEF's theoretical laboratories. He took a deep interest in ecology and environmental protection. He wrote a remarkable book on the evolution of the physical notion of a vacuum (which he entitled *The Theory of Emptiness*). Undoubtedly, it is among the best pieces of science history. Unfortunately, the book has not yet found a publisher.



Mikhail Vasil'evich Terent'ev

Mikhail Vasil'evich was an extremely gentle and kind man. High moral standards and untainted honesty of him were combined with extraordinary tact and kindness. At the time of the last farewell, someone said he had been the conscience of the ITEF's theoretical department. It is not customary to say such words while a person is alive, but it is our firm belief that although they had not been spoken aloud earlier, Mikhail Vasil'evich felt our love and respect.

Mikhail Vasil'evich is not with us any longer, but he will remain alive in our memories and in our hearts, and his works have become part of the golden fund of science. He liked to quote the poet Boris Pasternak: "The aim of one's creative activity is to give up all of oneself, and not a lot of talk nor a race for success...". Mikhail Vasil'evich's life was a confirmation of the truth of these words.

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