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## REVIEWS OF BOOKS

G.E. Gorelik, V.Ya. Frenkel

*Matvei Petrovich Bronstein*

*and Soviet Theoretical Physics in the Thirties*

Translation from Russian by V.M. Levina

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Matvei Petrovich Bronstein has been sentenced to death by a firing squad on February 18, 1938 at the age of 31 by the Military Tribunal of the Supreme Court of the USSR on invented charges of "preparing terrorist acts against the Soviet government". He has been rehabilitated twenty years later, but a definitive book about him could appear only in 1990 after the fall of the Soviet Empire.

Who was M.P. Bronstein and why did he die? He was a brilliant and highly promising theoretical physicist in Leningrad whose life was cut short because he happened to live at a time and in a place where every person who differed in any way from an average was running a very high risk of being arrested, sent to a labor camp, or summarily executed. The years 1936–1938 were perhaps the worst in this respect in the Soviet Union. People were being killed in large numbers and their families very often were not even informed about it. In the case of Bronstein his wife was told by the authorities that he has been sentenced to ten years of hard labor without the right of writing and receiving letters. At that time no one knew that it was an euphemism for death by firing squad. It took two years for Bronstein family to learn the truth.

In their book about Bronstein the authors give a portrait of one tragic figure painted against the background of the development of Soviet physics in the thirties. Both authors are good theoretical physicists in addition to being experienced historians of physics. Gorelik should be credited with the first effort in the Soviet Union to write about M.P. Bronstein. He succeeded in "smuggling" elements of Bronstein's biography into a review article on the history of quantum gravity written in 1982. Two years later Gorelik and Frenkel co-authored a more extensive article on M.P. Bronstein. Both these articles were published in the Soviet annual review of relativity theory called "Einsteinovski Sbornik" (Einstein Studies). We must note that even in the eighties, thirty years after his rehabilitation, when one could write already about Bronstein, his tragic death was not allowed to be mentioned in print. In the forties and fifties even references to his papers were either forbidden or just judiciously avoided. In a collection of papers on general relativity commemorating 100 years since Einstein's birth published in the Soviet

Union in 1979 we find, side by side, two papers on the quantization of gravity. The first by Bronstein written in 1937, the second by Ivanenko and Sokolov written in 1947. Both papers deal with the same problem and their techniques are quite similar, but the pioneering work by Bronstein is not mentioned at all in the second paper. An oversight? Lack of information? Impossible! Bronstein and Ivanenko were very close friends and collaborators at the Physico-Technological Institute in Leningrad. This is, however, how the system worked. Ivanenko and Sokolov knew very well that to quote Bronstein in their paper spelled trouble. The paper not mentioned by Ivanenko and Sokolov contained the most notable contribution of M.P. Bronstein to physics: a theoretical analysis and a concrete realization of the quantization program for the gravitational field. It is a pioneering work and not much new has been discovered in that matter after Bronstein's paper.

The book on Bronstein by Gorelik and Frenkel contains a mix of history of physics, history of Soviet Russia, and physics itself. The proportions are well balanced and the book offers a fascinating reading to a wide audience. Perhaps, some readers less versed in theoretical physics might find more technical passages in the book too difficult to follow closely, but they will certainly appreciate the overall picture of theoretical physics in Leningrad in the thirties. A mixture of original excitement and feeling of achievement turning for many into tragedy.

The book has been originally published in Russian. The English translation of the book is generally good but some terse passages could have been improved by a more careful editing.

*Iwo Białynicki-Birula*