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Alexander Evseevich Braunstein was born on May 26, 1902 in Kharkov into a family of physicians. His father was a well-known ophthalmologist, a Professor of the Medical Institute, and President of the Kharkov Medical Society.

Alexander Evseevich entered secondary school at the age of eleven. By that time he had obtained a thorough background in natural and social sciences as well as in classical and modern languages by domestic education. In his biography he wrote "Fluent usage of German, English, and French has been a lifelong advantage, both in my scientific activities and as a subsidiary source of earning". With great enthusiasm he experimented in a small home chemical laboratory, and he wanted to be a chemist. But in the turbulent post-revolution years in the Ukraine only in medical colleges was higher education relatively undisturbed. That is why in 1920 A. E. Braunstein entered Kharkov State Medical Institute. After graduation from the Institute in 1925 he became a postgraduate student at the Institute of Biochemistry of the People's Commissariat of Health (in Moscow) in a group headed by V. A. Engelhardt. In 1928 A. E. Braunstein defended his Ph. D. thesis on interrelationships of glycolysis and phosphate metabolism in erythrocytes. In 1928-1936 Braunstein worked at a number of institutes of the People's Commissariat of Health where he studied the relationship between phosphorus metabolism and oxidative-reduction processes in cells and pathways of detoxication of aromatic compounds in mammals.

In 1936 two events determined his scientific and personal fate. This year he married Sophia Kreiden. In 1981 he wrote in his biography "After my marriage with Sophia Kreiden (1936), her unfailing charm and affection filled our home with a rare and lasting atmosphere of harmony and happiness". In 1936 A. E. Braunstein headed a laboratory at the All Union A. M. Gorky Institute of Experimental Medicine where in 1937 in collaboration with M. G. Krizman he discovered a new type of enzymatic reaction—the transfer of an amino group from an amino acid to a keto acid. He named this reaction transamination. The first paper appeared in the *Byulleten' Eksperimentalnoi Biologii i Meditsiny* in 1937 (**3**, 246-248). The discovery of the transamination reaction should be considered as one of the outstanding discoveries in biochemistry in the XX century.

A. E. Braunstein returned to Moscow from evacuation at the end of the Great Patriotic War. In 1945 he continued his research work on the role and biological importance of the transamination reaction at the Institute of Biological and Medical Chemistry at the newly formed USSR Academy of Medical Sciences. In 1939 Braunstein hypothesized that a coupled action of transaminases and glutamate dehydrogenase might play a cardinal role in nitrogen metabolism and its connection with energetic processes in cells. In the 50s this hypothesis was confirmed in research done by Braunstein and coworkers.

In 1944-1945 interconversion of pyridoxal and pyridoxamine by nonenzymatic transformation with amino and keto acids was discovered in the USA and UK. This opened a new stage in studies of nitrogen metabolism. Investigation of pyridoxal-5′-phosphate functions at the laboratory headed by A. E. Braunstein demonstrated that pyridoxal-5′-phosphate was involved in metabolism of several amino acids—Trp, Ser, Cys—and some previously unknown transformations of these amino acids were shown. As one of the results of these studies the paper "Metabolic paths of tryptophan in animals and the functions of vitamin B_6 in its transformation" appeared in 1949 in *Doklady Akademii Nauk SSSR* (**65**, 715-718). Some hypothetical reactions on the pathways of L-tryptophan metabolism as well as the existence of a hypothetical new metabolite, 3-hydroxy-L-kynurenine, proposed in this paper were soon detected.

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It is remarkable that in this paper A. E. Braunstein proposed a mechanism of hydrolytic cleavage of L-kynurenine by kynureninase which was confirmed only in the 90s. He also emphasized that the involvement of pyridoxal-5′-phosphate in the catalysis of three then known enzymatic reactions—transamination, L-kynurenine cleavage, and β-decarboxylation—should be accounted for by electronic peculiarities of pyridoxal-5′-phosphate. Thus, in this paper A. E. Braunstein briefly outlined the general theory of pyridoxal-5′-dependent catalysis. This theory was formulated in 1952-1953 in collaboration with M. M. Shemyakin. In his biography (1981) he wrote: "This theory (and similar ideas developed independently by E. E. Snell et al.) correlated a remarkable number of facts and allowed accurate prediction of still unrevealed coenzyme functions of pyridoxal-5′-phosphate".

At the end of 50s the techniques to obtain homogeneous pyridoxal-5′-phosphate-dependent enzymes were elaborated. After that time Braunstein's efforts were mainly focused on studies of structures and mechanisms of transaminases, glutamate decarboxylase, and β-eliminating lyases. In 1959 at the USSR Academy of Sciences a new Institute of Radiation and Physico-Chemical Biology, currently known as the Institute of Molecular Biology, was founded by Academician V. A. Engelhardt. In it A. E. Braunstein organized the laboratory of Chemical Bases of Biocatalysis. Mechanistic and structural investigations of a number of pyridoxal-5′-phosphate-dependent enzymes which were performed in this laboratory were highly evaluated by the world scientific community. The high level of these investigations are explained by the fact that Braunstein created a team of qualified biochemists (E. V. Goryachenkova, B. S. Sukhareva, O. L. Polyanovsky, Yu. M. Torchinsky, et al.), chemists (R. M. Khomutov, M. Ya. Karpeisky, E. S. Severin, V. L. Florentiev, N. V. Gnuchev), and physicists (V. I. Ivanov, Yu. V. Morozov). As the salient landmarks should be mentioned elaboration of a dynamic molecular model of enzymatic transamination (V. I. Ivanov, M. Ya. Karpeisky, 1968), determination of the amino acid sequence of pork heart cytosolic aspartate aminotransferase (in collaboration with academician Yu. A. Ovchinnikov and his colleagues, 1972), and solution (in 1977) of X-ray structure of chicken heart cytosolic aspartate aminotransferase (in collaboration with Academician B. K. Vainstein and his colleagues at the V. A. Shubnikov Institute of Crystallography).

Thus, the splendid scientific way of A. E. Braunstein illustrates the way of biochemistry in the XX century starting from a description of metabolic processes up to molecular enzymology. In our country he founded a school of enzymology that is known worldwide. Now his students are working in numerous fields of physicochemical biology.

A. E. Braunstein put much energy and time into the work in editorial boards of numerous domestic and foreign journals and into an organization of scientific conferences and symposia. His encyclopedic erudition favored the elaboration of the principles of enzyme classification and biochemical nomenclature.

A. E. Braunstein was held in highest scientific respect in our country and abroad. He was elected a member of the USSR Academy of Sciences (1964) and of the USSR Academy of Medical Sciences (1945), Honorary Doctor of the Universities of Brussels, Paris-VII, and Greitswald, and honorary member of a number of scientific societies and academies of several countries including the National Academy of Sciences of the USA.

He was a recipient of the Labor Red Banner (twice) and of the title "Hero of Socialist Labor" associated with the award of the Lenin Order and the Sickle and Hammer Gold Medal. In 1941 he was awarded the State Prize in Science and Technology, and in 1980 he was awarded the Lenin Prize in Science and Technology.

A. E. Braunstein died on July 1, 1986 in Moscow.