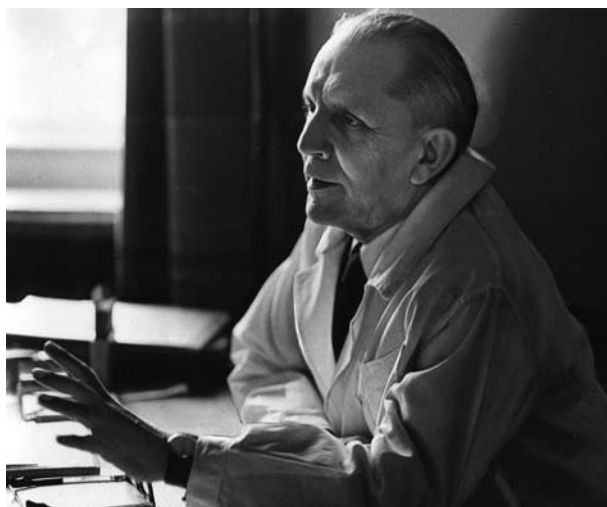


DEVOTION TO SCIENCE IDEALS

(To 110th birthday anniversary of academician R.E. Kavetsky)



Today it is almost impossible to imagine modern theoretical and experimental oncology without a prominent pathophysiologist and oncologist of our country academician Rostislav Evgenievich Kavetsky. As a talented student, associate, and follower of O. Bogomoletz's ideas, R. Kavetsky developed his concept on the role of the physiologic system of connective tissue, applying it to the field of experimental oncology. He insistently and universally studied the causes of malignant transformation, building the future scientific strategy on fundamentals of world achievements and trends of that time. Every great and creative person always devotes his talent, knowledge, plans and kindness as an inheritance to the pupils. R. Kavetsky was just such personality.

R.E. Kavetsky was born on December 1, 1899 in Samara and following his father, a physician, upon finishing of gymnasium, became a student of medical faculty of Samara University, where Professor E.L. Kavetsky was the rector. On a paternal line both Rostislav, and his elder brother Nicolai, Doctor of Medical sciences, Professor, internist, were doctors. All his ancestors in the Ukrainian old family of his mother Elena Korsun were sotniks, regimental cornets, cossack captains, and only since 1805 the traditions changed and all men became the lawyers. In her memoirs, the daughter of R. Kavetsky, Natalia Kavetskaya-Mazepa recalls: "Already being the grown-up woman and looking on the father, I was repeatedly surprised, from where for him, intellectual, polite, and easily vulnerable, that he concealed successfully, such moral courage, such firmness, such successive lack of ability to bend? His appearance was quite not "heroic" — of low stature always consistently thin, outside even tender with his eyes full of kindness. From where he draws this internal strength, independence and ability to resist the things that he believed to be the evil? As

if he inherited these features, apparently contrasting to his overall softness and tolerance, from his glorious ancestors, the cossacks who perished or survived in the fights....".

In 1925 R. Kavetsky began his postgraduate studies in the 2nd Moscow State University (later the 2nd Moscow Medical Institute) in the Department of Pathophysiology headed by one of the prominent pathophysiologists of our country O.O. Bogomoletz. R. Kavetsky always was proud of the involvement in scientific school of O.O. Bogomoletz. Such detail is important: the first scientific papers of R. Kavetsky were devoted to his father, doctor E. Kavetsky, and to his teacher O.O. Bogomoletz. On the bookshelf of young scientist the papers appear with compliment inscriptions made by O.O. Bogomoletz.

At the turn of the 30th, academician O.O. Bogomoletz was elected the President of Academy of Sciences of Ukraine. On his initiative, the Institute of Experimental Biology and Pathology of Public Commissariat (Narkomat) of Health of Ukraine was set up in Ukraine, and in 1931 he with the group of his disciples including R. Kavetsky, moves from Moscow to Kiev. From this time on, the life and the scientific activity of R. Kavetsky were tightly linked with Ukraine. Since that time, the scientific interests of young scientist focused more and more on one of major problems of medicine — study of the causes of cancer origin, the mechanisms of carcinogenesis, and the role of host in the cell transformation. Such researches became the basis for developing the adequate treatment methods and outlining the principal ways of cancer prevention. And these problems became the topics of the whole life of R.E. Kavetsky.

In 1933 R.E. Kavetsky was awarded PhD degree, and in 1937 — the degree of the Doctor of Medical Sciences, and two years later he became the Professor.

As summing up the pre-war period of scientific activity of R. Kavetsky his monograph "The role of active mesenchyma in host disposition to malignant tumors" was important in support of the concept of academician O.O. Bogomoletz that cancer develops only in the setting of the inhibition of defense response of connective tissue.

Based on the research of O.O. Bogomoletz, R.E. Kavetsky was the first who proposed to use antitumoral cytotoxic serum (ACS) for the treatment of cancer. Preliminary positive results were obtained but World War interrupted these studies. ACS was widely applied in the military hospitals facilitating the convalescence of wounded Soviet soldiers.

In 1942 R.E. Kavetsky as a volunteer joined the Soviet Army where he served as a senior inspector

of evacuation receiving stations of South-West and Stalingrad fronts. He was awarded the medal of Red Star and several other medals.

In 1944 after the liberation of Kyiv from fascist occupants and demobilization from the army, R.E. Kavetsky goes back to the scientific work. By the will of fate, in 1946 after the death of his teacher, R. Kavetsky headed the staff of the Institute of Clinical Physiology of Academy of Sciences of UkrSSR. It was very difficult, if not the heaviest period in the history of the national biological science. At this time, together with like-minded colleagues, R. Kavetsky fearlessly faced an attacks and actively resisted the shots of the so-called "Pavlov's dogmatists" who tried, and sometimes successfully, to "revise" the concept of O.O. Bogomoletz on the physiology of connective tissue.

In 1945 R.E. Kavetsky was elected the Corresponding Member and in 1951 — Active Member of Academy of Sciences of UkrSSR. In 1952 he became the member of Presidium of Academy of Sciences of UkrSSR, chairman of Bureau of the Division of Biological Sciences.

In the post-war time R. Kavetsky together with his followers was engaged in studying the role of the nervous system in neoplastic process and its interaction with other systems. As the result of this comprehensive work, the monograph "Tumor process and nervous system" (1958) was published, which was the first of such kind in the world scientific literature. This monograph has been translated into English and published in the USA.

R. Kavetsky with great attention and care supervised scientific researchers in the field of experimental oncology in various research and clinical institutions. Since the necessity of intensifying the fundamental cancer research in Ukraine became obvious, in 1960, on the initiative of R. Kavetsky, the Ukrainian Research Institute of Experimental and Clinical Oncology of Ministry of Health of the UkrSSR was set up in Kiev (currently, R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of the NAS of Ukraine). The organizer and the first director of the Institute, R. Kavetsky became the leading ideologist of the research in the field of experimental oncology in Ukraine. Due to his personal qualities and extraordinary scientific enthusiasm, R. Kavetsky was able to consolidate the huge collective of adherents on very thorny biological and medical problems. Under the direct leadership of R. Kavetsky, the Ukrainian school of experimental oncology was formed in the Institute. The study of mechanisms of tumor-host interactions with the emphasis on the role of the nervous system became the key trend of the research efforts summarized in the fundamental monograph "Tumor and host", published in 1961. The book has won the wide international recognition, and in 1964 R. Kavetsky was awarded O. Bogomoletz Prize for that tremendous work.

The study of humoral and cellular antitumor responses allowed to find out the typical characteristics of the immune response against the neoplasms induced by chemical carcinogens and oncogenic viruses. It was

shown that anticancer humoral response may not only to inhibit proliferation of transformed cells but also to stimulate tumor growth. The fundamental studies on the role of endocrine system in cancer have demonstrated that the hormonal disbalance contributes to the biological features of tumors. Such data formed the basis for the development of novel methods of cancer prevention and treatment targeting neuroendocrine system. These results were generalized in 1977 in the monograph "Interaction of Host and Tumor".

Today the updated concept of tumor and host interaction becomes generally recognized. The idea of the tumor as a local process was replaced by the concept of cancer as the systemic disease. Therefore, the new ways of cancer treatment should be considered. And this is one more proof of the correct scientific prediction of the scientist whose way was from idea to experiment and then to the practice.

R. Kavetsky was in fact the generator of new ideas perceiving the perspective trends in modern science. The studies of molecular mechanisms of leukemogenesis and biophysical features of carcinogenesis were initiated at the Institute. It was in 1968 when the first in Ukraine Department of Biological and Antitumor Effects of Lasers was set up. These experimental studies on laser therapy followed by their implementation in clinical practice were awarded the State Prize of the UkrSSR in the field of science and engineering in 1972.

At the end of 70th in the Institute due to R. Kavetsky's initiative the studies of sorption techniques for detoxifying the blood have been started. The principally new hemosorbents eliminating the toxic products from the blood were developed. R. Kavetsky also initiated the study of nonspecific protective-regulatory mechanisms in carcinogenesis. The evidences of the involvement of hemostasis system in formation of antitumor resistance at the stages of tissue malignization, implantation of circulating cancer cells, and formation of neoplasm were obtained. For the first time, the effects of endogenous interferon on chemical carcinogenesis and metastasis in experimental setting have been demonstrated.

The problem of anticarcinogenesis totally occupied R. Kavetsky in the last years of his life (1972–1978). He justified the theoretical possibility of affecting the elements of carcinogenesis either for cessation of transformation or prevention of tumor progression. The concept of anticarcinogenesis still attracts the attention of many scientists in the world.

It was in 1979, when on the initiative of R. Kavetsky the international scientific journal "Experimental Oncology" was set up, and is publishing for more than 30 years.

The name of R. Kavetsky is widely known abroad, for many times he represented our science in different international congresses and conferences. A scientist left a large scientific heritage. He is the author of more than 600 scientific publications, among which there are 17 monographs devoted to different aspects of theoretical and experimental oncology. They could be characterized by the originality and the deepness of the discussed problems and ideas as well as direct

practical orientation. That is why we can assert the presence of tight connection of the fundamental studies results with the practical oncology needs.

In 1981 R. Kavetsky (posthumously) and group of his colleagues were awarded the State Prize of the UkrSSR in the field of science and technique for the cycle of investigations on the mechanisms of normal cell transformation into malignant and formation of anticancer resistance.

Academician R. Kavetsky was awarded the several state medals of the USSR. A title of Honoured Science Worker was conferred to R. Kavetsky in 1960.

R. Kavetsky is a personality of the inexhaustible creative energy. His scientific and organizing talents were accompanied by deep adherence to principles, cordiality and readiness to be always beneficial. He was a personality of high intrinsic culture, typical of our real intellectuals. His deep analytical mind and wit combined with scientific devotion allowed R. Kavetsky

to become one of coryphaeus and creators of our medicine and experimental oncology.

R. Kavetsky died on October 12, 1978. In 1979 the Institute of Problems of Oncology of the Academy of Sciences of UkrSSR was assigned the name of R. Kavetsky, and on the December 1, 1979 in honor of 80th R. Kavetsky's jubilee both memorial museum and memorial board were established in the Institute. R. Kavetsky prize in experimental oncology was founded by resolution of Presidium of NAS of Ukraine.

The memory of such talented personality still lights scientific way for the Institute of Experimental Pathology, Oncology and Radiobiology of NAS of Ukraine, where every researcher is proud to have direct relation to the scientific school created by academician R. Kavetsky.

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