

LIFE HISTORIES OF THE FOUNDERS OF KHARKIV SCHOOL OF HYGIENE

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Abstract

This article describes the life history of the founders of Kharkiv school of hygiene Arkadiy Ivanovich Yakobiy (1827–1907) and Ezro Musiyovych Kahan (1887–1948). It is dedicated to the 150th anniversary of the Department of Hygiene and Ecology No.1 of Kharkiv National Medical University (KhNMU) and the 100th anniversary of Research Institute of Occupational Hygiene and Occupational Diseases.

Both of these talented individuals left their places of birth, secondary and higher education at some point, due to certain unfavorable consequences of regional life, and arrived in prosperous Kharkiv. Having a wide range of knowledge, both worked in a wide aspect of science and practice that relate to the general well-being of various categories of the population, including environmental, household, epidemic, production, family and other statuses of human life. Both came to the conclusion that identifying and overcoming risk factors for health deterioration is a very promising direction for achieving global well-being of humanity. Based on this, both became the founders of the Kharkiv School of Hygiene.

Yakobiy A.I. founded the first department of hygiene at Kharkiv University on February 1, 1873, and headed it for the following 12 years. Kahan E.M. headed specialized institute for workers' health problems (the first on the territory of the USSR), namely the Institute of Occupational Medicine, in May 1923, and managed it until 1931. During the term of their work at Kharkiv hygienic institutions, these professors provided a methodological basis for the multi-decade development of the corresponding scientific, pedagogical and practical field of state health care.

Keywords: *historical aspects, scientific research, health care, lifestyle, professor Yakobiy A.I., professor Kahan E.M.*

Arkady Ivanovich Yakobiy was born on September 22 (October 4), 1827, in Kazan. Having received a home education, he entered the faculty of physics and mathematics of Kazan University in spring of 1843. He graduated from this university in 1847 with the degree of a candidate of physics and mathematics (*Fig. 1*).

While working at Kazan University, he submitted an application for dismissal from this higher education institution among seven progressive professors in November 1871, criticizing its unfavorable educational conditions (*Fig. 2*).

Arriving in prosperous Kharkov, he received the status of extraordinary professor of the Imperial Kharkiv University at the Department of General Therapy and Medical Diagnosis on May 8, 1872.

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Then working as a professor of the Department of Forensic Medicine and Hygiene of the Faculty of Medicine of the Imperial Kharkiv University since 1873, he recognized the concept of preventive medicine as a significant direction of health care. After that, Arkady Ivanovich Yakobiy founded the Department of Hygiene of Imperial Kharkiv University on February 1, 1873, was the first to occupy the chair of hygiene and headed it for 12 years (from 1873 to 1885). He received the academic title of ordinary professor on December 4, 1875.

In 1889, at the solemn meeting of Kharkiv University, he spoke about the tasks of the State Red Cross. In his report, he called for the organization of shelters and nursing homes for the sick and wounded, shelters for widows and orphans, the organization of manufacture of limb prostheses, and the establishment of stations for climatic treatment of the wounded (*Fig. 3*).

Arkady Ivanovich Yakobiy determined that the term hygiene comes from the Greek ὑγιεινός (healthy).

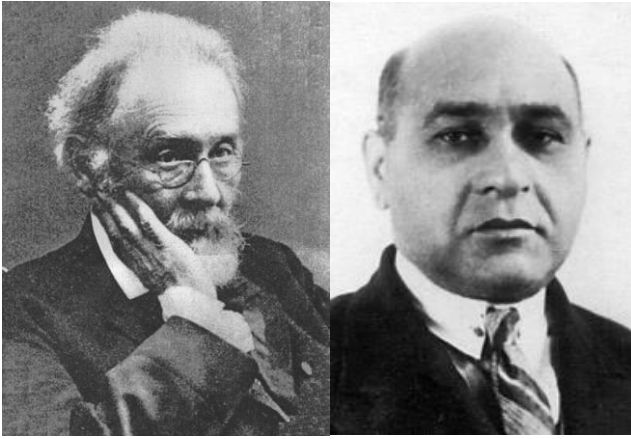


Fig. 1. Leading founders of Kharkiv School of Hygiene professors Arkady Ivanovich Yakobiy (1827–1907) Ezro Musiyovych Kahan (1887–1948)



Fig. 2. Professors of Kazan University who resigned (1871)



Fig. 3. The solemn meeting of Imperial Kharkiv University (1889)

According to the definition of Yakobiy A.I., hygiene is a science that studies the influence of environmental factors on the health, working capacity and life expectancy of a person and develops the measures to improve the conditions of his/her life and work.

Hygiene defines and evaluates risk factors for health and substantiates methods of managing

them (modes of work and rest, sanitary norms and rules, individual regulations) as well as uses both specific methods of preventive medicine (epidemiological analysis, sanitary surveys and description, sanitary and hygienic expertise, laboratory and natural experiments), and those borrowed from other sciences [1; 2].

The field of scientific interests of Yacobiy A.I. was versatile. His works on the methodology of hygienic research were widely used in hygienic practice and provided the basis for development of preventive medicine, which has been implemented worldwide. He proved the relevant information related to the methodology of preventive medicine: the method of researching the porosity of bread in hygienic practice [3]; determination of the hygienic value of ventilation formulas, in relation to overcoming the relevant risk factors [4]; communal hygiene, ecological and psycho-emotional bases of stay of certain categories of population in different countries of the world [5–8]; proving a wide range of hygienic risk criteria for the development of a certain range of diseases, including epidemic and environmental diseases of a certain population [9–16].

In teaching of hygiene and scientific research, Yacobiy A.I. was guided by the idea that a person cannot be considered and studied outside the society, outside the social conditions. The lectures that the professor gave to medical students of Kharkiv University were called *A Course of Public Hygiene*. They were recorded by the student Okorokov and published in 1885 as a manuscript reproduced by lithographic method. The book, edited by professor Yacobiy A.I., includes the following sections: waste and its disposal; the history of development of sanitary facilities; soil; climate; ventilation; artificial climate; dwelling; feeding; starvation; water supply; population biology; places of

imprisonment; diseases from the polluted air of closed premises; school; disinfection; epidemics; sexual activity [17]. He described the sanitary conditions and daily life, the economy of the examined communities, and even the policy of the royal officials in relation to certain categories of the population. His public lecture on March 16, 1869 *About happiness from the perspective of hygiene* received a disapproving assessment from Archbishop Antony of Kazan in a letter to the trustee of the educational district Shestakov P.D., because the lecturer indicated that "the only way to the happiness of mankind is in hygiene".

In addition, the hygiene methodology based on the implementation of the principles of disease prevention among different categories of the population was determined by the author at the expense of research in the field of sanitation, epidemiology, ethnography, state public organizations, including the Red Cross [18; 19].

To date, the significant historical contribution of professor Yacobiy A.I. is recognized. It was he, who created the methodological base for the further development of preventive medicine, performing scientific and pedagogical work at Kharkiv University [1; 20–23]. The first Ukrainian Department of Hygiene is celebrating its 150th anniversary in 2023.

During the entire history of the department, its employees conducted extensive scientific and research work on various hygienic problems (Fig. 4).



Fig. 4. The staff of the Department of Hygiene and Ecology No.1, which is located at KhNMU Research Institute of Occupational Hygiene and Occupational Diseases (2019)

The founder and first director of Kharkiv Institute of Occupational Medicine, Ezro Musiyovych Kahan, was born in July 1887 in Riga. In 1901, he left an elementary school, in 1910 he passed the exams for the matriculation certificate as an external student in Vitebsk. But the restless nature of the young man was cramped within the patriarchal environment. Since childhood, he was looking for an outlet for his boiling energy. And he found this way out in revolutionary activity, which at that time was gaining strength and recruiting personnel on the territory of the Russian Empire (*Fig. 1*).

It is quite logical that Ezro joined the ranks of the Jewish Socialist Party (Bund), which aimed to create national and cultural autonomy, according to the principle "There, where we live, that is our country" [24]. However, at the height of the revolutionary events of 1903–1905, arrests of Bundists became a daily occurrence. He stayed for four months in the royal prison and was released under police supervision.

Despite the state emergency, the mentally gifted young man entered the Yuryiv (Tartus) University. In 1910–1916, Kahan E.M. studied at the medical faculty of this prestigious educational institution. After graduating from the university, he worked as a doctor at Oryol Provincial Zemstvo Hospital. And then there was an appointment that determined the entire further professional path of doctor Kahan E.M. He was appointed to the position of doctor of Oryol hospital fund. It should be emphasized that these specialized institutions were first implemented in Germany, and on the territory of the Russian Empire they were implemented in 1912, according to the law "On insurance of workers in case of illness" dated June 22, 1912. From 1919, the so-called Kharkiv period of almost 20 years of the life of the outstanding doctor and organizer of national health care Kahan E.M. started. It contained the highest rise of his talent, as well as a deep personal tragedy. All this was shared with Ezro Musiyovych by his wife Berta Volodymyrivna and daughter Dina [25].

The very atmosphere of that time contributed to the discovery of the scientist's talent. It is known that in the USSR the 20s and 30s of the last century were a period of formation and rapid development of hygienic science and sanitary practice. It was Ukraine that took the lead in the organization of state sanitary supervision. The methodical and organizational center of this activity was in Kharkiv, that time the capital of the Soviet Ukraine. In April 1922, the fateful 3rd Congress of

bacteriologists, epidemiologists and sanitary doctors took place in Kharkiv, at which the "Regulations on Sanitary Organization" were approved.

In June 1923, the resolution "On sanitary bodies of the republic" was signed by the Council of People's Commissars of the Ukrainian SSR. Having moved to Kharkiv, doctor E.M. Kahan continued his work in the field of occupational pathology as a doctor of the hospital fund. In 1920, he was appointed to the position of the chief physician of Kharkiv Workers Polyclinic, as the head of the consulting bureau of Department of Labor Protection of the People's Commissariat of Labor of the Ukrainian SSR.

Kahan E.M. began his pedagogical activity by lecturing on the course of hygiene and labor protection at Kharkiv Institute of Technology and Kharkiv Institute of National Economy (1921–1923). In 1923, Kahan was sent to Germany for an internship.

Upon arrival from the appointment, he was elected a professor of Kharkiv Medical Institute. Undoubtedly, organizational frivolities, broad erudition and practical knowledge on the basis of two indispensable directions in medicine – therapeutic and preventive – allowed Professor Kahan E.M. to take a fateful step for native medicine: to justify the feasibility of creating the Institute of Labor Medicine on the basis of Kharkiv Workers Polyclinic and in May 1923 to head this first on the territory of the USSR specialized institute for problems of health protection of workers [26]. On the initiative of Professor Kahan E.M., this institution had a complex structure, which included a hygiene department with relevant laboratories, a department of labor physiology (which, due to a coincidence of interests, was headed by him himself), a clinic of occupational diseases with a polyclinic.

Creative thinking of Professor Kahan E.M. also manifested when setting the main task of a fundamentally new institution: the study of topical problems that are on the border of natural and social sciences, physical, chemical, technological and other factors [27; 28]. How not to compare this with today's priority direction of the institution – the medicine of borderline conditions [29]. After five years of existence, in 1929, when the institute proved its viability, and the economic situation in the state somewhat stabilized, the collegium of the People's Commissariat of Health of the Ukrainian SSR took a decision to build a specialized building for the location of the Central

Institute of Pathology and Occupational Hygiene (CIP and OH) (this was the name of the institution in 1928–1939). All responsibility for construction was assigned to the director. The construction was difficult, accompanied by a reduction in funding, numerical checks and "organizational conclusions".

The institute building, designed by the architect Viktor Abramovich Estrovych (1881–1941), was commissioned in 1935. The Research Institute is still located in this building (*Fig. 5*).



Fig. 5. The building of Central Institute of Pathology and Occupational Hygiene (1935)

Professor Kahan E.M. headed this institution until 1931, when the management of the institution was transferred to his successor Zinovy Davidovich Gorkin, after which he worked as a deputy director for research until 1938.

Professor Kahan's scientific interests covered a wide range of problems related to the systematic analysis of human labor activity, which, according to academician Kundiyev Yu.I. [30], was essentially the first epidemiological studies in occupational medicine aimed at multifactorial analysis of health risks in order to manage them.

The works of the scientist on in-depth analysis of the morbidity of workers [31; 32], problematic issues of toxicology [33–36], foundry production, which was covered by his doctoral dissertation (defended in 1925) [37], work on physiology [38; 39] are well-known. Professor Kahan E.M. founded the national school of occupational hygienists. Famous scientists, heads of departments and scientific institutions, including Abramovich M.O., Vasylevsky V.M., Gorkin Z.D., Miller S.V.,

Karminskyi M.S., Navrotskyi K.V., Neiman A.F., Sakhnovskyi Y.D., and others, graduated from his scientific school [40]. On the initiative of Professor Kahan, sanitary and hygiene faculties were opened in medical universities. It was the demand of the time, and for many years to come it determined the structure of medical education, the theory and practice of health care. Our present is making its own corrections to the structure of Ukrainian health care based on the European experience, but the long-term positive experience of the preventive direction of the native medicine gives reason to assert its expediency and perspective. The change of the existing paradigm of health care is envisaged precisely in the direction of preventive orientation (*Fig. 6*).

Taking into account the professor's services to health care, the People's Commissariat of Health of the Ukrainian SSR awarded Kahan E.M. the title of Honored Professor in 1934. It was state recognition and probably the peak of the master's career.

There were only a few years left before the period of oblivion... In February 1938, Professor Kahan E.M. was arrested, and in October 1939 he was imprisoned in a forced labor camp for 5 years "for belonging to a counter-revolutionary organization".

The tragic circle of fate closed in the camp located in the Kirov region. What the tsarism forgave at one time was not forgiven by the Soviet government. The Bolsheviks reminded the Bundists of the accusation of "usurpation of the will of the people" [24]. Presumably, the professor's foreign business trips were not left out of the attention of the punitive bodies. It is obvious that the strong will and endurance inherent in this intelligent man played a role during the period of the camp trials, during which the doctor Kahan did his job – treated. And there were many sick among the prisoners. Hard camp work, in conditions of daily supply shortages against the background of the Great War, exhausted people. The medical assistance provided by an experienced professional pathologist was all the more valuable.

In 1942, "for conscientious attitude to work as a doctor, excellent behavior in everyday life" [30] and at the request of the Camp Management, Professor Kahan E.M. got conditional early release.

Since that time, he worked in the hospital for freelancers of the Vyatlag Department of the People's Commissariat of Internal Affairs (PCIA) of the USSR, living at the station of Lisniy, Kaisky



Fig. 6. The staff of Central Institute of Pathology and Occupational Hygiene (1932)

District, Kirovohrad Region. But the fortunes of Professor Kahan E.M. did not end there. The famous professor did not remain unnoticed by his Russian colleagues. His own authority and the authority of his scientific school formed the prerequisites for overcoming the period of oblivion.

Professor Vinnikov M.E., deputy director of Omsk Medical Institute, addressed a letter to the head of the USSR PCIA Directorate for Omsk region. Justifying the expediency of appointing Professor Kahan to the position of head of the department of occupational hygiene, he referred to his experience as the director of Kharkiv Institute of Occupational Hygiene and Occupational Diseases and head of the department of hygiene.

Permission from the PCIA was received [41]. From this time, a new period of the professor's life, little studied by Ukrainian specialists, begins.

The occupational hygiene department of Omsk Medical Institute, which he headed in 1945–1948, was the first hygiene department at the sanitary-hygienic faculty of this university. It was organized on the initiative of the famous occupational hygienist Professor Israelson Z.I. in 1941. This

gives reason to claim that Professor Kahan E.M. stood at the origins of its existence. Possessing a colossal pedagogical education and teaching skills, Professor Kahan E.M. immediately joined the work. It was he who created the program on the occupational hygiene course, which is the basis of the current educational programs [42]. It is with the name of Professor Kahan E.M. that the creation of the hygienic school of Western Siberia is connected, the priority direction of which is still hygienic provision of the oil-mining industry.

Such well-known professors as Dvoryaninova N.K., Demchenko V.G., Ogleznev G.O. and others graduated from this school [43]. After courageously overcoming the period of oblivion, the period of earthly nothingness came for the outstanding professor. He went to Eternity. On August 4, 1948, Ezro Musiyovych died and was buried at the Old Jewish Cemetery in Omsk.

And all of us, colleagues and followers of Professor Kahan E.M., are extremely grateful to the leadership of Omsk State Medical University for erecting a monument on the grave of the outstanding hygienist in 2010.

The chronicles of Professor Kahan's life show that this talented man devoted himself to his country and to the improvement of its state system. The system raised this individual to the heights of social recognition, and then turned him into camp dust.

The lesson is that in that era, this is how the Soviet people were "hardened". It is bitter to realize that the period of non-existence of a famous scientist was only occasionally broken by not numerous, but meaningful publications about him [30; 40–45]. According to the biblical story, when Jesus Christ, an already well-known preacher, returned to his homeland, to Judea, he was met there with distrust, and one of the Pharisees insisted that nothing good could come out of the worthless Nazareth. "...Jesus said to them: there is no prophet without honor, except only in his homeland and in his house" [46]. Centuries later, this phrase acquired the meaning of a catchphrase, which translating from the Old Slavic language sounds like this: "There is no prophet in his homeland". According to the conclusion of the Kharkiv Region Prosecutor's Office on May 4, 1989, based on Article 1 of the Decree of the Presidium of the Supreme Soviet of the USSR dated December 16, 1989, Kahan Ezro Musiyovych was rehabilitated.

Today, the Research Institute of Occupational Hygiene and Occupational Diseases of Kharkiv National Medical University is a powerful research institution that focuses on preventive and curative work to preserve the health of workers in

Thus, the leading founders of Kharkiv School of Hygiene, professors Arkady Ivanovich Yakobiy (1827–1907) and Ezro Musiyovych Kahan (1887–1948), made the methodological basis

of scientific-pedagogical and research work of the relevant hygiene units of Kharkiv National Medical University, which were also improved during the respective 150 and 100 years of the Department of Hygiene and Ecology No.1 and Research Institute of Occupational Hygiene and Occupational Diseases (Fig. 7).



Fig. 7. The emblem of KhNMU Research Institute of Occupational Hygiene and Occupational Diseases (Author Korobchanskyi V.O.).

Based on the long history of Kharkiv hygiene science, practice and education, further successes of national preventive medicine aimed at identifying and overcoming risk factors for deteriorating health of various categories of the population are inevitable [47]. But today, the most urgent preventive measures are to overcome the risk factors of an emergency during military operations [48].

There is no **conflict of interest**.

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