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TO THE 125th ANNIVERSARY OF THE SI “INSTITUTE OF EPIDEMIOLOGY AND INFECTIOUS DISEASES NAMED AFTER L.V. HROMASHEVSKYI” OF NAMS OF UKRAINE

The review is dedicated to the 125th anniversary of the opening of the Bacteriological Institute in Kyiv (now it is called the SI “Institute of Epidemiology and Infectious Diseases Named after of NAMS of Ukraine) on the initiative of the Society for Control of Infectious Diseases, a non-governmental self-managing organization that united Kyiv’s microbiologists. It is noted that it was the first institution to study infectious diseases in Ukraine. The activity of the Society, has been described. The efforts of a group including professors in medicine from the Kyiv University of Saint Volodymyr, namely K.G. Tritschel, O.D. Pavlovskiy, V.P. Obraztsov, V.V. Podvysotskiy, F.K. Bornhaupt, M.I. Stukovenkov, F.O. Lesh, F.G. Yanovskiy, V.Ye. Chernov, and others have been appreciated. It is emphasized that one of the priority tasks specified in the statute of the Society, approved on December 21, 1895, was the foundation of the Bacteriological Institute. A number of problems considered by the Society members have been described in detail. Special attention is paid to the role of patrons, in particular L.I. Brodskiy and O.N. Tereshchenko, thanks to whose donations the construction of the Institute became possible. The activity of directors and employees working in this scientific institution, namely V.Ye. Chernov, V.K. Lindeman, O.D. Pavlovskiy, V.K. Vysokovych, L.V. Hromashevskiy, and others, is covered. It is noted that during the first decade of the Institute’s existence, it produced important prophylactic drugs (against diphtheria, anti-meningococcal, anti-streptococcal, and tetanus serum), as well as vaccines against smallpox, cholera, typhoid, anthrax, and rabies. The work emphasizes that over 125 years of its operation, the Institute has undergone several reforms, and today it is the main scientific institution in Ukraine for the problems of epidemiology, microbiology, virology, parasitology, and infectious diseases. The importance of modern developments performed by the Institute’s staff such as new methods of treatment, diagnosis, and prevention of influenza, pneumonia, intestinal infections, scarlet fever, tetanus, viral hepatitis, meningoencephalitis, HIV infection, etc. has been highlighted.

Keywords: *infectious diseases, medical society, vaccines, disease prevention, epidemiological department, bacteriology.*

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The Kyiv Bacteriological Institute was established on October 21, 1896. It was the first such an institution on the territory of Ukraine. The initiative for its creation belonged to the Society for Control of Infectious Diseases (below the Society) which undertook to unite all Kyiv bacteriologists to study contagious diseases as well as to obtain and use the drugs necessary for their treatment. For this purpose, on November 12, 1894, professor of the Kyiv University K.G. Tritshel gathered colleagues in his apartment, namely A.D. Pavlovskiy, V.P. Obratsov, V.V. Podvysotskiy, F.K. Bornhaupt, M.I. Stukovenkov, F.O. Lesh, F.G. Yanovskiy, V.E. Chernov, and others. They elected an editorial board to develop the structure and statute of the future society. To obtain the necessary funds, a collection of donations was announced through the newspaper “Kievlianin” on the initiative of its editor D.I. Pihno [1].

The Statute of the Society was approved on December 21, 1895. This document proclaimed its goal as “the fight against infectious diseases affecting humans and animals”. The specific tasks reflected in the Statute were as follows:

- to organize a Bacteriological Institute for the manufacture, testing, and practical application of drugs against infectious diseases;
- to open medical institutions for the treatment of contagious patients;
- to promote the fight against contagious diseases, carried out by the state, public organizations, and individuals, by creating sanitary detachments and vaccination stations, supplying the population with medical products manufactured at the Bacteriological Institute;
- to disseminate among the population the concept of infectious diseases, methods of their treatment and prevention by organizing public lectures, training courses for medical personnel, and publishing and distributing popular brochures and books of appropriate content [2].

On April 14, 1896, the first open meeting of the Society for the control of infectious diseases

was held in the hall of the Kyiv Nobility Assembly (now the building of the Kyiv Philharmonic). L.I. Brodskiy was elected chairman of the meeting. Thanks to his generous donations, the establishment of Society became possible. The proposition to establish the Bacteriological Institute met the support of the participants. To develop a plan and estimate its construction, a special commission was elected chaired by Professor of the Department of children’s diseases of Kyiv University V.Ye. Chernov [3]. On the same day, a ceremonial laying of the building for the future institute took place. The choice of location for it had been made very carefully in advance. A Member of the Society economic committee, Professor from the Department of Dermatovenereology of Kyiv University M.I. Stukovenkov [4] examined free plots of land belonging to the Military Fortress Engineering Administration and chose 20 acres on the Baikova Hill, which then were outside the city but connected with it with a paved road.

The Kyiv military district allocated 2 tithes of the mentioned site free of charge for 5 years, and in March 1896 the construction of the institute building began. It was thanks to voluntary donations of L.I. Brodskiy (the largest part: 132,000 rubles), O.N. Tereshchenko, O.V. Demidova, and others. The architectural practice in the construction of medical institutions in Kyiv was far behind similar engineering in St. Petersburg and Western Europe. For this reason, the author of the project, engineer K.G. Ivanov was sent to St. Petersburg to get acquainted with the structure of the Imperial Institute of Experimental Medicine. The construction of a two-storey brick building of the laboratory at Kyiv Bacteriological Institute, which began in March 1896, was completed 7 months later. The building looked elegant, and the composition of its facade showed the features of the late Renaissance. The internal layout met the requirements of a research institution. All four departments were located on the same side of the corridor; their windows

were directed to the east and south. High ceilings ensured good air exchange, sanitary equipment was of high quality for that time (engineer L.M. Horodetskyi was responsible for installing heating and ventilation) [5].

On October 21, 1896, in the large hall of the new building, a ceremonial meeting of the Society council took place on the occasion of the Institute opening. It was attended by many famous people such as Prince O.P. Oldenburgskyi elected honorary chairman of the meeting, his wife Yevhenia, Kyiv's governor-general, Kyiv's head, Rector of the University of St. Vladimir historian F.Ya. Fortinskyi/, and others. O.D. Pavlovskyi made a presentation "Infectious diseases and their control" saying in conclusion: "Opening the Kyiv Bacteriological Institute today, after two years of hard efforts and hard trials, we should all feel deep moral satisfaction. The culture of the country and the degree of its development are recognized by the institutions it has created. The establishment of institutions similar to our Bacteriological Institute indicates the country's need for scientific knowledge and work. History will be our highest and fair judge. History will not forget the period of the creation of such institutions in the country because such acts do not pass without a trace. The future will appreciate our work and deeds, and every healthy, real, and useful undertaking will grow and develop. The idea we put at the foundation of these walls is strong because it is as old as humanity itself and flows from love for it". At the meeting, greeting telegrams from the director of the Pasteur Institute in Paris E. Duclaux, head of the Moscow Bacteriological Institute G.N. Habricheskyi, the head of the Odessa bacteriological station P.M. Diatroptov, and others were received [6].

The economic committee of the Society for the control of infectious diseases, created on April 14, 1896, after completing the main task, i.e. the construction of the building for the Bacteriological Institute, stopped its activities. The station for the production of anti-diphtheria serum, temporarily

located in house No. 9 on Nikolsko-Botanichna Str., and the Pasteru station for the treatment of rabies, which rented premises in house No. 39 on Zhylianska Street, moved to the main building. In addition to the main building, the institute had stables, a wooden shed for breeding rabbits and guinea pigs, and a small dog kennel. On May 3, 1900, the Society leased the main plot with an area of more than 20 acres for 36 years (with payment of 10 rubles per year). After the redevelopment, the southern slope of Baykova Gora took the form of three terraces, the steep slopes of which descended to the bed of the Lybid river. In 1900—1901 on the new territory, engineer S. Beck with funds donated by O.N. Tereshchenko, constructed three buildings, two brick and one wooden, for sick patients along with warehouses, workshops, three stables, and other outbuildings designed in the appropriate architectural style. The complex of Institute buildings was located on the territory of the former oak forest, where large centuries-old trees were kept.

The first director of the Bacteriological Institute was V.Ye. Chernov, followed from 1910 to 1922 by Professor of the General Pathology Department of Kyiv University V.K. Lindeman. The vice-director for scientific work until 1918 was O.D. Pavlovskyi, who supervised the work of the first serotherapeutic department. In 1909, this position was taken by V.K. Vysokovich. He was the head of the second vaccination (Pasteur) department from 1886. The main purpose of the first department was to produce anti-diphtheria serum, and subsequent tasks were the production of other sera (anti-streptococcal, anti-scarlet, anti-tetanic...), scarlet vaccine, and tuberculin. The purpose of the second department was to treat people bitten by rabid animals with Pasteur vaccination. The number of people who applied for help to the vaccination department increased from 482 to 3450 for 15 years. In addition, the department produced anti-dysenteric serum and cholera vaccine and arranged preventive vaccinations for everyone.

In 1899, the third department appeared in the Institute's structure, namely the veterinary department under the leadership of V.K. Lindeman, which produced vaccines against anthrax, swine erysipelas, and murine typhus as well as antistreptococcal serum. The necessity for using new experimental methods in studying infectious pathological processes led to the creation of the fourth department, one of experimental medicine, which was headed by V.K. Lindeman as well. The decision to open this division was made on June 14, 1903, in accordance with the resolution of the general meeting of the Society for the control of infectious diseases. The Society discussed V.K. Vysokovych's proposition of arranging the fifth, epidemiological and statistical, department in order to study the spread of contagious diseases in the South-Western region and familiarize doctors with measures to combat them. However, the tsarist government did not give permission for that, and such a department was opened only after 1917.

On February 23, 1897, a decision to open systematic courses in theoretical and practical bacteriology for physicians on the basis of the Bacteriological Institute was made. The first course was lectured by O.D. Pavlovskiy from April 20 to May 20, the second — by V.K. Vysokovych from May 20 to June 20. The course program was improved every year, and the other heads of the Institute departments and their assistants were involved in lecturing. Professors from Kyiv University were invited for lecturing on certain theoretical issues. Practical experiments on laboratory animals were carried out in a specially equipped room. The theoretical part of the course cost 10 rubles, while the practical part — 15 rubles. Every year there were many people who wanted to take classes, but the Institute was not able to accept more than 20 candidates at the same time [7].

In the first ten years of the Institute's existence, thanks to the efforts of its four departments, the production of a number of prophylactic drugs was launched such as anti-diphtheria, anti-

streptococcus, anti-meningococcal, anti-tetanic sera, as well as vaccines against smallpox, cholera, typhoid fever, anthrax, and rabies. After the Bessarabian covered market was built practically with Brodskiy's money (500 thousand rubles), the statute of the Society was added with an article that 6% of the market monthly income should be transferred to the maintenance of the Bacteriological Institute. However, after 16 years, the Institute's income reached a significant amount (about 150,000 rubles of gross income), and it itself already represented a whole town. On its territory, there was a house with quarters for employees, a shelter building for 150 patients, a laboratory for experiments on large animals, two buildings of stables, five heated rooms for breeding small animals, as well as such outbuildings as a smithy, a carpenter's workshop, a coal warehouse, and a glacier.

The scientists working within the walls of the Bacteriological Institute made impressive progress in various areas of epidemiology. O.D. Pavlovskiy prepared the following serums: anti-cholera, anti-tetanic, and anti-streptococcal, which, like the anti-diphtheria one, were obtained by his method. These serums were distributed in the South-Western territory [8]. In 1897, he created the drug “rhinosclerin” for the treatment of rhinoscleroma and developed a special nutrient medium for tuberculosis bacteria. The publication “On the question of infection and immunity” (1899) described the influence of various factors such as cold, injury, starvation, alcoholism, etc. on the course of infection and the state of the animal's immune defenses. The result of these studies was an in-depth understanding of the essence of phagocytosis [9].

In 1907, about 2,000 cases of cholera with a significant fatal outcome were registered in Kyiv. On June 6, 1910, after several hundred analyzes of drinking water performed at the Bacteriological Institute, V.K. Vysokovych extracted cholera vibrio from the water of the Pochaina stream, which flowed into the Dnipro near the harbor,

from where the water was supplied to the aqueduct. On the scientist's recommendation, the city administration was forced to drill several artesian wells to provide Kyiv's inhabitants with drinking water [10].

At the end of the nineteenth century, the increasing cases of typhoid fever attract the serious attention of doctors. Often the losses from typhus in the troops of the army were no less than from the weapons of the enemy. According to V.F. Bushuev's opinion, the sanitary condition of the Russian army at that time was far behind the German one [11]. A prominent role in the fight against this disease was played by Vysokovych's typhoid vaccine, developed according to his own method for the first time in Russia. He tested its effectiveness on September 14, 1898, on the soldiers of the Bessarabian regiment stationed in Kyiv on Podil, which gave him reason to propose typhoid inoculations for the mass vaccination of soldiers [12].

In 1897, V.K. Vysokovych was sent to India as the head of the Russian expedition to fight plague, and V.V. Podvysotskyi took the leadership of the department [13]. In this period, his interest in epidemiology was especially pronounced. It was closely combined with the problems of immunity and the pathology of infections. Following

this principle, V.V. Podvysotskyi was the first in our native science to combine the ideas of biology with general pathology [14].

Time has confirmed O.D. Pavlovskyi's words pronounced on the eve of the opening of the Bacteriological Institute and predicting a long and glorious future for this institution. Many talented scientists performed their research in it, namely O.A. Krontovskyi, M.P. Neshchadimenko, L.V. Hromashevskyi, and others. The Institute has survived a number of reorganizations and the corresponding name changes. Now it is called the Institute of Epidemiology and Infectious Diseases named after L.V. Hromashevskyi of NAMS of Ukraine and is the main scientific institution in Ukraine on the problems of epidemiology, microbiology, virology, parasitology, and infectious diseases. It is located in a new large building on Amosov Street, 5. Unfortunately, its first premises, including a picturesque building with decorative pediments, Corinthian columns, and an impressive interior, are gradually falling into disrepair. As one of the most expressive examples of achievements in the field of architecture and science of Ukraine, it certainly deserves more attention from the organizations responsible for the preservation of monuments of our history.

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ДО 125-РІЧЧЯ КИЇВСЬКОГО БАКТЕРІОЛОГІЧНОГО ІНСТИТУТУ

Стаття присвячена 125-річчю від дня відкриття Бактеріологічного інституту в місті Києві. Наголошується, що це був перший заклад з вивчення інфекційних хвороб на теренах України. Показано, що ініціатива створення Інституту належала недержавній самоврядній установі — Товариству по боротьбі з інфекційними хворобами, заснованому завдяки зусиллям групи професорів-медиків Київського університету Св. Володимира: К.Г. Трітшеля, О.Д. Павловського, В.П. Образцова, В.В. Підвисоцького, Ф.К. Борнгаупта, М.І. Стуковенкова, Ф.О. Леша, Ф.Г. Яновського, В.Є. Чернова та ін. Підкреслено, що одним із першочергових завдань, зазначених у статуті Товариства, затвердженого 21 грудня 1895 року, була організація Бактеріологічного інституту. Описано низку проблем, які довелося подолати членам Товариства для здійснення цього завдання. Особливу увагу приділено ролі меценатів, зокрема Л.І. Бродського і О.Н. Терещенка, завдяки чим жертвуванням стало можливим спорудження будівлі Інституту. Висвітлено діяльність директорів та співробітників цієї наукової установи, а саме В.Є. Чернова, В.К. Ліндемана, О.Д. Павловського, В.К. Високвича, Л.В. Громашевського тощо. Зазначається той факт, що вже впродовж першого десятиріччя існування Інституту в ньому був налагоджений випуск важливих профілактичних препаратів (протидифтерійна, протименінгококова, протистерптококова, протиправцева сироватки), а також вакцин проти віспи, холери, черевного тифу, сибірки і сказу. Зазначається, що за 125 років свого існування Інститут пережив декілька реформувань. Нині його звати ДУ «Інститут епідеміології та інфекційних хвороб ім. Л.В. Громашевського АМН України» і він є головним науковим закладом в Україні з проблем епідеміології, мікробіології, вірусології, паразитології та інфекційних хвороб. Підкреслюється значущість сучасних розробок співробітників Інституту, а саме нових методів лікування, діагностики та профілактики грипу, пневмонії, кишкових інфекцій, скарлатини, правцю, вірусних гепатитів, менінгоенцефалітів, ВІЛ-інфекції тощо.

Ключові слова: *інфекційні хвороби, медичне товариство, вакцини, профілактика хвороб, епідеміологічне відділення, бактеріологія.*