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FOUNDATION AND DEVELOPMENT OF DEPARTMENT OF HUMAN AND ANIMALS PHYSIOLOGY OF ODESSA NATIONAL MECHNYKOV UNIVERSITY

Summary

It was investigated the periods of foundation and development of Department of Human and Animals Physiology and its place in 148-year history of the Odessa (Novorossiysk) University: from the period of training the personnel and material conditions (1872) to the our time. It was presented the contribution of the famous scientists who worked in the department over the years, starting with Sechenov I. M. It was described the current state of educational and scientific work of the department, its main achievements and priorities, and the main activities of its graduates.

Key words: history, Odessa University, Department of Human and Animals

Department of Human and Animal Physiology began to be formed simultaneously with the foundation of the Imperial University of Novorossiysk. Within its walls in the periods worked outstanding physiologists of world renown: Nathan Osipovich Bernstein, Sechenov, Bronislaw Fortunatovich Verigo, Pyotr Spiro, Vasily Zavyalov, Daniel Semenovich. Vorontsov, Ivan Solomonovich Berit, Boris Babkin, Evgeny Sinelnikov, Raphael Osipovich Faytelberg Valery Dmitrievich Taranenko.

The first stages of the organization full professor Sechenov physiological laboratory, on the basis of which gradually came Department of Human and Animal Physiology, date back to the year 1872 and were carried out at the department of zoology, comparative anatomy and physiology of the Imperial

University of Novorossiysk. After moving from St. Petersburg to Odessa Sechenov I put a lot of effort to equip the physiological office equipment. Acquired at their own expense the equipment abroad, manufactures equipment in the university workshop.

Working in Odessa for about 6 years, Sechenov carried out a number of important physiological works. Here, it is set the value of hemoglobin and the liquid portion of blood for the binding and transport of carbon dioxide. In Odessa, he made an important discovery that not only in the central nervous system, but also in the peripheral excitement alternates with the braking process. The results of these studies have them published in the Proceedings of the Novorossiysk Society of Naturalists in an article entitled "A few notes about the action on the nerves very quickly consecutive stimuli." Major studies Sechenov performed in conjunction with the Mechnikov and student Repyahovym V. M. on the influence of the vagus nerve on the heart activity.

It should also be noted that in Odessa Sechenov with Kovalevsky translated into Russian major works of Charles Darwin. Physiological work Sechenov published during his work in Odessa, entered the golden fund of domestic science.

After leaving Sechenov from Odessa in 1876, the laboratory of physiology at the University headed by his student assistant professor P. A. Spiro. He continued research on the physiology of the central nervous system, discovered the phenomenon of reciprocal innervation, described the phenomenon of reflex-effect, discovered the phenomenon of summation in the nerve centers, and studied the phenomenon of hypnosis. After the death of P. A. Spiro November 25, 1893 and headed the laboratory of physiology student Sechenov - extraordinary professor BF Verigo. In Odessa (since 1894), he mostly developing two areas: neurophysiology and immunity problems.

Exploring the physiology of the nervous system, he proved that the process of excitation between nerve conduction and there are certain relationships. The excitement he interpreted as a process of intermittent, during which the nerve in

the redistribution of ions. Extensive research B. F. Verigo spent in the field of immunology.

After the transition B. F. Verigo in 1900 at the Department of Physiology of the Medical Faculty of the Imperial University of Novorossiysk head of the Laboratory of Physiology was elected an extraordinary professor V. V. Zavyalov (1903). In this laboratory in 1915, come to work, young lecturers I. S. Berit and D. S. Vorontsov. While working for 4 years in Odessa I. S. Berit established the law coupled irradiation of excitation in the central nervous system, investigated the reciprocal innervation of skeletal muscle. At the same time, D. S. Vorontsov studied the mechanism of excitation of nerves and nerve electric potentials, frog heart electrocardiogram investigated. In connection with his departure abroad (Bulgaria) in January 1920, full professor Vladimir Zavyalov, superintendence goes to Professor B. P. Babkin.

In 1920, on the basis of the physiological laboratory of the department of zoology, comparative anatomy and physiology is organized by the Department of Animal Physiology. In 1920-1922, the student in charge of the department of Pavlov B. P. Babkin. The main problem, which was developed in this period - the physiology of digestion.

In 1922, Professor B. P. Babkin was forced to go abroad and the Department of Physiology headed by Professor E. I. Sinelnikov. E. I. Sinelnikov was born in 1885 in Moscow. In 1905 he entered the Medical Faculty of Moscow State University and graduated in 1911. After that, went to Zurich (Switzerland) to improve the knowledge in the field of physiology.

In 1912, E. I. Sinelnikov returned to St. Petersburg and began working in Pavlov's laboratory at the Institute of Experimental Medicine, participating in the development of the problems of higher nervous activity. In 1918, E. I. Sinelnikov moved to Odessa at the Department of Normal Physiology, Medical Faculty of the University of Novorossiysk.

In 1922, Professor E. I. Sinelnikov headed the Department of Physiology, University of Odessa. Research E. I. Sinelnikov concerned various sections of

physiology: physiology of the central and autonomic nervous system, thermoregulation, physiology of digestion and lymph formations.

Having developed a special method of warming and cooling blood flowing to the brain, Professor E. I. Sinelnikov proved that the agent *tepleregulyatsionnyh* centers in the cerebral cortex and other parts of a change in blood temperature. Employees of the department headed by him also belongs the merit of establishing conditioned reflex regulation of body temperature.

Under his leadership, successfully defended their dissertations Semeniuk L. A., Gugel-Morozova T. M., Solomyanym V. M., Dick Ya. M., Zakharov A. V., Voley Z. M., Shulgina N. S.

Elaborates during this period (in the department) problems of physiology of digestion, the innervation of the salivary glands, the secretory and motor activity of the intestine of humans and animals. Examines the role of intestinal lymph formations in the functioning of body systems.

E. I. Sinelnikov died in September 1951 after the death of E. I. Sinelnikov chair of physiology until 1978 headed by his pupil - professor of the Odessa Agricultural Institute R. O. Faytelberg. Together with a team of employees he continued to study E. I. Sinelnikov on the physiology of digestion and developed this problem for many years. As a result of this work has been investigated the role of different parts of the cerebral cortex and cerebellum in the regulation of absorption in the small intestine. Experimenting in the experiments has been studied absorptive function of the large intestine of sheep, animals on external anastomosis interoceptors The role of the small intestine in the process of digestion and absorption in the hunger and thirst, defines the role of the blind intestine of sheep in the digestive process. In addition, we developed a special technique for the study of absorption of drugs and nutrients in the oral cavity and thoroughly investigated these processes.

The results of these studies are published in 6 monographs and published in the central physiological and biological journals of the country (more than 280 articles). Professor R. O. Faytelberg created the Odessa school of physiologists

gastroenterologists. Under his leadership it was defended 6 doctoral and 46 master's theses, including Bocharova N. K., Ryabova L. A., Alekseeva, Z. I., Vengrzhanovskim P. N., Skalatskiy A. S., Siemik L. I., Gladkiy T. V., Ermakova T. A., Rahimberdievoy A. Sokolova A. G., Balan V. D., Bashev N. N., Vasilevsky V. S. et al. Under the leadership of Robert O. Faytelberga prepared and doctorates Semeniuk L. A., Geshelin S. A., Marchenko A. I., Nguyen Tai Luong, Guska N. I., Sherbina M. I.

From 1948 to 1990 R. O. Faytelberg with the staff organized and conducted 18 All-Union, republican and regional scientific congresses, symposiums, conferences on the physiology of digestion and absorption in the gastrointestinal tract. Under the guidance and direct active participation of prof. R. O. Faytelberga were also impeccably organized and carried out a series of conferences dedicated to the anniversaries of scientists: V. I. Vernadsky, I. M. Sechenov, A. O. Kovalevsky, A. I. Herzen, I. I. Mechnikov, M. V. Lomonosova.

Since 1958, Professor R. O. Faytelberg with Professor I. I. Puzanov headed the section of the history of science and technology at the Odessa House of Scientists.

At the initiative of R. O. Faytelberga were published in scientific journals "Prominent scientists of Odessa" and "Maestros of physiological science of Ukraine and Russia", were published collections of memoirs "The experiences." Rafail Osipovich Faytelberg awarded a number of government awards and diplomas of the Presidium of the Supreme Soviet of the USSR and Ukraine.

Died R. O. Faytelberg in 1998 by 96 year of life.

From 1978 to 1999. Department of Physiology directed by Professor Taranenko V. D. With its arrival were organized and equipped with modern facilities the two electrophysiological laboratory and medical-biological clinic (vivarium) and, for the first time in Odessa, were introduced microelectrode technique neurophysiological research. The main area of research was to study the mechanisms of interneuron interaction in cortex. Actively explore the cellular mechanisms underlying paroxysmal activity in cortex and other brain structures.

We studied the mechanisms of neurotransmitter receptor systems of the central nervous system. It was established mechanisms of action of convulsant agents, and GABAergic nature (together with professor L. M. Karpov) on the processes of post-synaptic inhibition. Neuromorphological actively pursuing studies of the cerebral cortex after various effects (together with Associate Professor Siemik L. I.). When it became known in the department of the country and abroad the center of neurophysiology. These problems have been defended 10 PhD theses (Timofeyev I. V., Turkin V. V., Kiryazova T. H., Lopantsev V. E., Topolnik E. V., takes Namori, Sudha, etc.). Students of the department are currently working in well-known universities and clinics in the US, Canada and Germany. For 13 years, professor V. D. Taranenko (1986-1999.) Was dean of the Faculty of Biology. December 31, 1999 V. D. Taranenko died after a serious illness.

In 2000, the head of the department performed the duties of Associate Professor L. I. Siemik.

Since 2001, the department was headed by Doctor of Biological Sciences, professor L. M. Karpov, which continues to develop and research directions and the traditions established by their predecessors. This increased emphasis on the action of new physiologically active substances, including neurotropic properties.

Currently in the department has 2 doctors and 5 candidates. Over the past 5 years by scientists of the department published 90 publications, including the scientometric publications of Ukraine: 3 defended their dissertations.

Read department provides general courses: "Chronobiology", "Human anatomy", "Human and animal physiology", "Methodology and methods of biological research." As well as special courses: "The morphology and evolution of the nervous system," "Breathing Physiology", "Age Physiology", "Physiology of isolation", "Physiology of excitable tissues," "Physiology of the central nervous system with the fundamentals of Psychophysiology", "Physiology and Pathophysiology of visual organ" "Physiology of the cardiovascular system," "Physiology and Pathophysiology of blood", "Physiology and Pathophysiology of

digestion", "Ecological Physiology", "The physiological effect of biologically active substances", "Physiology of muscles."

General courses in anatomy and physiology of the human members of the department are taught for students of physical and chemical faculties.

The main research interests of the department:

- Mechanisms of interneuron interaction in the cortex of the brain of the main;
- Cellular mechanisms underlying paroxysmal activity in cortex and other brain structures;
- The study and modeling of the functioning of the neurotransmitter systems of the central nervous system;
- Study the mechanisms of action of physiologically active substances on different body systems under experimental pathological conditions;
- Effects of different types of hypoxia on the body;
- Hypobaric oxygenation, barotherapy.
- Effects of electromagnetic fields and radiation on the physiological and biochemical systems of the body.

To solve these problems chair has medical-biological clinic, two laboratories and practice base, in which students conduct their experiments. This laboratory of the Institute of Eye Diseases and Tissue Therapy named after V. P. Filatov, laboratories Institute of Physical Chemistry of NAS of Ukraine named after A. V. Bogatsky and others.

The department cooperates with the Institute of Physiology NAS A. A. Bogomolets (Kiev), Kiev National University named after T. G. Shevchenko Institute of Gerontology, National Academy of Sciences of Ukraine (Kiev), the Institute of Physiology, I. M. Sechenov (Mr. St. Petersburg), the Institute of Eye Diseases and Tissue Therapy of Medical Sciences of Ukraine named after V. P. Filatov (Odessa), Institute of Physical Chemistry of NAS of Ukraine named after A. V. Bogatsky (Odessa), Moscow State University named after M. V. Lomonosov Moscow State University, the Military Medical Academy named after S. M. Kirov (Saint Petersburg).

Graduates of the department are widely in demand, but primarily in the field of medicine (laboratory assistants, laboratory doctors of clinical laboratories) for research institutions and institutions (medical, physiological, pharmacological, toxicological profiles). Many of them work in secondary and higher educational institutions, including the ONU Mechnikov.

Currently, the department work as teachers:

Karpov Leonid Mikhailovich - Doctor of Biological Sciences, Professor, Head of Department;

Ostashkov Konstantin Vladimirovich - Doctor of Medical Sciences, Professor;

Siemik Lidia Ivanovna - candidate of biological sciences, associate professor;

Gladkiy Tatiana Vladimirovna- PhD, Associate Professor, Deputy Dean of the Faculty of Biology;

Maikova Anna Viktorivna - Ph.D., associate professor;

Lavrenko Anna Nikolaevna - PhD, associate professor;

Pavlicenco Olga Dmitrievna - Senior Lecturer;

Kolomiychuk Tatiana Viktorivna - Senior Lecturer, Academic Secretary of the Department;

Denisenko Oksana Viktorivna - the senior teacher.

Teachers, teaching and support staff, graduate and undergraduate students are prepared to meet adequately the 150th anniversary of Odessa National University. Thus the main aim is not only to preserve the high level of the department, which was reached predecessors, but also new challenges put forward by modernity, namely the confirmation of the scientific school and priority scientific areas, modernization of the department and its scientific and educational potential.

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