

SIGNIFICANCE OF PHYSICIANS' SOCIETY IN ODESSA IN GENERATION AND FORMATION OF PHAGOCYTOLOGICAL (I.I. MECHNIKOV'S) THEORY (DEDICATED TO CENTENARY OF I.I. MECHNIKOV'S NOBEL PRIZE AWARDING)

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Abstract: *The history of Mechnikov's phagocytal theory of immunity deals with the physicians' Society in Odessa. As early as 1874 Mechnikov was elected to be a full member of the physicians' Society in Odessa. However his active participation in the work of the Society began later on, i.e. in the 80-ies of the XIX century, when Mechnikov formulated his phagocytal theory of immunity. The fact that he came to the physicians' Society in Odessa was quite logically and it characterizes Mechnikov as a scientist who searches for qualified auditorium to discuss his hypotheses. Mechnikov attended 34 meetings of the physicians' Society in Odessa and made 6 reports, devoted to proofs of phagocytal theory of immunity. Meetings of the physicians' Society in Odessa were the first auditorium where reports on the phagocytosis theory, suggested by Mechnikov, were thoroughly discussed, subjected to criticism and it promoted generation and formation of the theory that afterwards was internationally recognized.*

Key words: *Physicians' Society In Odessa, I.I. Mechnikov*

Ilya Ilyich Mechnikov (1845-1916) and Paul Ehrlich (1854-1915) became the Nobel Prize winners in Physiology or Medicine, 1908. They were Nobel Prize awarded «in recognition of their work on immunity».

Considerable amount of literature is devoted to I.I. Mechnikov's life and activities and at the same time the analysis of appearance and formation of the phagocytal theory idea, which became one of the bases in teaching on immunity against infectious diseases of a human

organism, takes a prominent place. However, a very important transition of Mechnikov's-biologist to the field of studying a human organism's fight against causative agents of infectious diseases has not been traced back yet, but the step was made by I.I. Mechnikov in the very beginning of the phagocytal theory formation in 1883-1887. I.I. Mechnikov's collaboration with the prosectors Nicolay A. Stroganov (1843-1894) and Cheslav I. Chentsinsky (1851-1916) as well as discussion of Mechnikov's reports in the

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meetings of the physician's society in Odessa was of great importance.

The physician's society in Odessa was formed in 1849. At that age Odessa was a main commercial port of the Russian Empire in the Black Sea. The society united the physicians who worked in health stations of the city, maritime quarantine as well as general practitioners and military doctors. After establishment of Novorossiysk University in 1865 in Odessa some of the teachers of the University became its members.

In 1867 I.I. Mechnikov arrives in Odessa after his election as an associate professor of Novorossiysk University but next year he moves to St. Petersburg University. In 1870 he returns to Odessa as professor of zoology department of Novorossiysk University.

In 1874 the professor Mechnikov was elected as a full member of the society by Grygory N. Mynch's (1836-1896) proposal who was a chairman of the latter at that time. However, his active participation in the work of the society began later and it dates back to the 80-ies of XIX century when I.I. Mechnikov formulated clearly his phagocytal theory as well as entirely devoted himself to its proof.

As there could be a birth of this theory immunologist L.A.Zilber tells: « In the summer of 1882 of I.I.Mechnikov with a family has a rest in Italy on the bank of the Messinsky gulf. Tired sick eyes do not come off a microscope. He observes a life of mobile cells in a larva of starfishes. The larva is transparent and these cells are perfectly visible. And suddenly there is a thought that similar cells should serve in a human organism for „counteractions to harmful agents”» [1]

It is difficult now to tell how much exact L.A.Zilber's story was, but it is well-known, that the theory of phagocytosis arose just in 1882 and numerous zoological and embryological

I.I.Mechnikov's researches about a role of intracellular digestion and protective function of cells, formed of mesoderm, preceded its occurrence.

In the summer of 1883 VII Congress of naturalists and doctors of Russia gathered in Odessa and in August, 28th I.I.Mechnikov made the report «About curative forces of a human organism» on a general meeting of the congress. Then a victorious road of the phagocytal theory began.

In Odessa, where I.I.Mechnikov lived and worked at that time, microbiological researches were started on botany department of Novorossiysk University by the professor L.S. Tsenkovsky, and after his departure from Odessa in 1871, they were continued by Odessa doctors G.N. Minh, O.O. Mochutkovsky, Ch.I. Hentsinsky, N.A. Stroganov who were full members of the physicians's society in Odessa and they reported about the results of their researches at its sessions.

Thus physicians of Odessa, represented by the society, were ready for perception of I.I. Mechnikov's ideas. On the other hand, Illya Ilyich required a medical audience for discussion of the hypothesis put forward by him.

On November 26th, 1883 I.I. Mechnikov made the report «Comparative pathological research on inflammation in connection with a question on intracellular digestion» [2] at the session of the society. Here he stated the theory of phagocytosis for the first time after his report at VII Congress of Russian naturalists and doctors.

In March issue of the magazine «Russian medicine» in 1884 the “Open letter to the professor I.I. Mechnikov» was published by Odessa doctor Semyon Moiseyevich Shor (1845-1917). He wrote that doctors listened to Illya Ilyich's report with a great interest, but at the same time it was necessary to prove that principles of

the theory of phagocytosis were applicable for infectious diseases of a human organism [3]. I.I. Mechnikov did not disregard the questions which were put before him.

On May 12th, 1884 the society heard I.I. Mechnikov's report «About relationship of anthrax bacilli to phagocytes» [4]. It was his first research on medical microbiology problems which at the same time had immunological nature. New proofs of the phagocytal theory rightness were given in his work: it was shown that the phagocytosis phenomenon naturally occurs among vertebrates as well as invertebrates.

In 1886 I.I. Mechnikov made two more reports in the society. The first of them, reported on May 17th, was «About relationship of streptococci to phagocytes» [5] and the second one, made on October 18th, was «About destiny of microorganisms in blood» [6]. These works were further substantiation of the phagocytal theory. The debate, caused by those reports in the society, definitely affected the subsequent course of I.I. Mechnikov's work. So, on October 18th N.A. Stroganov and K.K. Iskersky told dissatisfaction with hypothetical explanation of phagocytes role in case of diseases progressing with crises. In his reply I.I. Mechnikov spent a series of new researches and on February 7th, 1887 he represented the report «Concerning the doctrine about malaria» [7] and on May 16th in the same year he made the report «About fight of phagocytes in case of relapsing fever» [8]. The doctrine on phagocytosis was not only disproved by supervision over these infections, but, on the contrary, it received a new acknowledgment.

In all during 1883-1887 I.I. Mechnikov was present at 34 sessions of the physicians's society in Odessa and he made 6 reports. The sessions, at which he told about the researches, were among the

most visited and on November 26th, 1883 when the society heard I.I. Mechnikov's report «Comparative pathological research concerning inflammation in connection with a question on intracellular digestion», maximum number of visitors for those years, i.e. 69 full members and 16 visitors, gathered (in 1883-1887 there were 37-38 full members at the society sessions on the average, taking into account that in 1883 there were 11 honorary members, 92 full members and 9 correspondent members in the latter) [9].

It is also necessary to notice that researches with use of medical microbiology methods were performed by I.I. Mechnikov in the prosectorium of the city hospital along with consultation and assistance of the full member of the Society doctor of medicine N.A. Stroganov who headed hospital prosectorium since 1877. In 1887 I.I. Mechnikov worked in collaboration with the assistant N.A. Stroganov who was then a military doctor in the prosectorium; it was his second job. Ch.I. Hentsinsky was studying malaria causative agents for many years.

Summarising all abovementioned it is possible to assert that sessions of the physician's society in Odessa were the first audience where reports on the theory of phagocytosis, offered by I.I. Mechnikov, were not only heard both at VII Congress of naturalists and doctors, but also they were thoroughly discussed, subjected to criticism and it promoted formation and becoming the theory that obtained international recognition afterwards. And full members of the society not only discussed and criticised I.I. Mechnikov's reports, but also assisted in laboratory researches (N.A. Stroganov, Ch.I. Hentsinsky).

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