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ALEXANDER ALEXSANDROVICH BOGOMOLETZ: HIS SCIENTIFIC AND PEDAGOGICAL ACTIVITIES



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Academician A.A. Bogomoletz's activities have been analyzed in the article as to his founding of Ukrainian national school of pathophysiology. It is stated that his scientific and pedagogical activities related to the period of his working in Ukraine. It is mentioned that he paid much attention to students' and doctors' education. The main idea of the article is to present the most prominent investigations and goals of the well-known academician and scientist A.A. Bogomoletz.

Keywords: pathophysiology, pathophysiologist, historical method, pedagogical and scientific activities.

In 2016 Alexander Alexandrovich Bogomoletz will be 135 years old. Academician Alexander Alexandrovich Bogomoletz is an outstanding pathophysiologist. His name is known in the world. A.A.Bogomoletz's monographs and annual conferences were organized by him and devoted to the most urgent trends in medicine. Great importance



in the solution of such new problems as shock, allergy, blood transfusion, longevity were regarded. At the same time A.A.Bogomoletz worked in Ukraine and was the Head of the Ukrainian Academy of Sciences for the period of 16 years (1930-1946).

A.A.Bogomoletz's scientific and pedagogical activities related to the period of his working in Ukraine, his activity as a founder of national school of pathophysiologists has been poorly studied nowadays.

Purpose of the research: to study A.A.Bogomoletz's scientific and pedagogical activities in Ukraine as a founder of national school of pathophysiologists. The historical method was used to decide the set problem.

In 1929 A. A. Bogomoletz was elected Member of the Academy of Sciences of Ukrain and he became its President in 1930.

In March, 1931, A. A. Bogomoletz moved from Moscow to Kiev, he discharged from the post of Director of the Central Institute of Hematology and Blood Transfusion.

In Kiev, in 1931, A. A. Bogomoletz, together with his pupils, organized the Institute of Experimental Biology and Pathology at the People's Commissariat of Public Health of the Ukrainian SSR, and in 1934 — the Institute of Clinical Physiology at the Academy of Sciences of the Ukrainian SSR was established. Here he joined all medical academicians' efforts: V.P.Vorobyov, V.P.Filatov, N.F.Melnikov, N. D. Strazhesko, and later V. P. Protopopov.

During the Kiev period of his activities, the talent of A. A. Bogomoletz as an organizer of science was brightly manifested. He displayed his many-sided scientific interests, his ability to unite the scientists and to enlarge the scientific staff by promotion, his gift for combining scientific work with state affairs, political and social activities.

Under his leadership the structure of the Ukrainian Academy of Sciences underwent radical changes. Departments, committees, laboratories were separated. Academician A. A. Bogomoletz headed the unfolding of the Academy's work under hard conditions of evacuation (1941-1943), when all its institutions were working to help the front. After returning to Kiev after its liberation, the Academy renewed and expanded its work under the leadership of the academician.

Simultaneously A. A. Bogomoletz, with the group of his disciples, compiled the capital multivolume work "Fundamentals of Pathological Physiology". The publication of "The Medical Journal" was begun; it had been the organ of theoretical medical thought in Ukraine for 20 years. He also organized annual conferences devoted to the most urgent medical problems (allergy, shock, pathology of blood circulation, aging, etc.). Those conferences were set on the All-Union scale; they marked the new stage in the development of the corresponding branch of science. His pupils published series of monographs, new generations of his school made themselves well-known (V. P. Komissarenko, O. A. Bogomoletz, P. D. Marchuk, S. A. Korol, R. B. Gragerova and many others). The institutes founded by him expanded their links in the scientific circles at home and abroad, their reputation increased.

During the period of his creative activity, which lasted nearly half a century, A. A. Bogomoletz contributed greatly to almost all the chapters of pathological physiology. His works on endocrinology, metabolism, immunity and anaphylaxis, oncology, pathology of blood circulation, shock, and blood transfusion were presented. The new stage in the development of these fields of Soviet physiology and pathology were worked out.

A. A. Bogomoletz was endowed with a deeply inherent ability of wide comprehension of a problem; he had an aptitude for recognizing the whole in separate details which to others could pass as inessential. Frequently he raised a point on the basis



of slight unobtrusive facts, which was later proved by experimental investigations. Characteristic of his entire scientific work was the ability of combining the profundity of theoretical ideas with the tasks of practical medicine.

The passion with which A. A. Bogomoletz upheld his concepts made him a brilliant propagandist of his ideas, but at the same time it often produced an erroneous impression that his interpretation of this or that subject looked one-sided.

His ideas on series of problems were far ahead of the level of science of that time and were proved by the investigations much later.

Problems of Endocrinology. Some of his works were devoted to the study of the internal secretion of the supra renal glands are of value even now.

The value of the works of A.A Bogomoletz in this field is that they had for the first time scientifically proved the reaction of the adrenal glands under various physiological and pathological conditions. A possibility had been found to stimulate their function by means of specific cytotoxic immune antibodies. Thus, the idea about the lipid nature of adrenal cortex hormones was expressed for the first time.

In the thirty years which elapsed from the time the book «The Crisis of Endocrinology» was published by Bogomoletz, world science made a great progress in the study of chemical structure of hormones, their influence of metabolism, in the production of synthetic analogues of hormones, as well as in the application of hormones and hormonal preparations in the treatment of various diseases. Many of the theories put forward by the author were splendidly proved (e.g., the nature and role of adrenal cortex hormones), some had to be revised in the light of new facts, still many of his ideas are of great interest even now. This concern first of all the points on the concept of hormones, the interrelations between hormones, enzymes and ions; the idea about the importance of the nature and functional condition of the organism for the effect of the hormones, etc. The critical analysis of a great number of publications is still valid.

Problems of Immunity and Allergy. In 1936 on the initiative of A.A Bogomoletz a conference on the problems of allergy was organized in Kyiv. Here he read a paper entitled «100 Questions on Allergy Problems» which was original in its form and matter. This paper, brimming with facts from various publications and obtained from investigations of the author and his colleagues, raised problems which had to be solved in order to create conditions for the development of investigations on allergy. Contemporary allergologists, who can give an answer only to a few questions on allergy raised by A.A Bogomoletz, are of the opinion that all his questions are to be answered before the problem of allergy could be solved. The conference played a great role in the studying of changed reactivity of the organism for it drew the attention of the scientists from throughout the country to the questions raised, it summarized the achievements and outlined the course of further development of his problem which was of the greatest importance for clinical medicine.

Problems of Physiology and Pathology of Blood Circulation. At the Institute of Experimental Biology and Pathology at the People's Commissariat of Public Health of the Ukrainian SSR, headed by A.A. Bogomoletz, N.N. Gorev and his collaborators began experimental investigations in the domain of genesis of hypertensive conditions. Later on, these studies were directed at elucidating the role played by the nervous system, endocrine glands, allergy and renal factor in the development of various forms of hypertension.

The attention of A.A. Bogomoletz was attracted also by other types of blood circulation disorders, in particular, such as characterized by drastic drops of blood pressure,



shock and collapse.

The results of work on this problem, which was of the greatest importance, were discussed at a conference organized by A.A.Bogomoletz, N. N. Burdenko and N. D. Strashesko in 1937. This conference was attended by the most outstanding scientists and the works presented at it are still of considerable scientific value. Organizational decisions taken at this conference were of major importance to the future development of shock treatment.

Problems of Blood Transfusion. Developing in problem of blood transfusion, A.A.Bogomoletz was not only experimenting and creating a theory which contributed greatly to medical practice, but took direct part in the practice of organizing the Institute of Blood Transfusion, working out blood preservation techniques, solving the problem of donors, etc. In particular, it was his idea about the preservation of blood from universal donors in the first place.

The merits of A.A.Bogomoletz were outstanding that in the years of the Second World War and in peaceful life thousands of lives of people were saved by timely blood transfusion.

The Problem of Ageing and Longevity. A.A.Bogomoletz ascribed the leading role in premature aging to social factors and the state of the nervous system. Longevity was viewed by Bogomoletz as a problem of adaptation of the organism to the changed physiological possibilities brought about by age.

In his endeavour for longevity Bogomoletz attached the main importance to social and hygienic measures, alternation of work and rest, working and living conditions, recommending treatment of premature ageing by blood transfusion and antireticular cytotoxic serum at the same time.

A.A.Bogomoletz created the largest scientific School of pathophysiologists in Ukraine. His disciples became independent scientists, later they headed departments and laboratories, preparing the third generation of Bogomoletz's school. His disciples were: Ye. A. Tatarinov, R. Ye. Kavetskiy, N. N. Sirotynin, V. P. Komysarenko.

Academician Bogomoletz A.A. paid much attention to students' and doctors' education. This prominent scientist was awarded the highest marks of the State. He was the real innovator in science, ruthlessly criticizing conservative views, fascinating the students by his ideas, giving them complete freedom for their scientific work at the same time. A.A.Bogomoletz was an ardent patriot of his country. He was the leader exclusive to himself and to his colleagues, tactful and considerate towards people. He was always ready to oblige them.

On the basis of this material we can draw the conclusion that academician A.A.Bogomoletz greatly contributed for developing of National pathophysiology and was the founder of Ukrainian school of pathophysiologists.

Bogomoletz's works contributed to the development of all branches of Pathophysiology. They concerned Endocrinology, metabolic disturbances, immunity, allergy, cancer, circulatory, pathology, pathogenesis of shock, mechanism of blood transfusion, ageing and others. Bogomoletz's scientific contribution in the field of Pathophysiology influenced the development of theoretical and practical medicine.

To sum up, Academician Alexander Alexandrovich Bogomoletz is a prominent pathophysiologist. A.A.Bogomoletz's works are well-known all around the world and conferences organized by him devoted to the most urgent trends in medicine. Great importance in the solution of these problems as shock, allergy, blood transfusion, longevity were regarded. He displayed his poly-branched scientific interests; his abil-

ity to unite scientists and to enlarge the scientific staff by promotion. That is why he had a lot of followers.

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USING OF INTERACTIVE TEACHING METHODS IN STUDENTS MASTERING OF MEDICAL GENETICS



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Abstract. The article adduces the methodological aspects of Medical Genetics teaching for the 4th and 5th year's students at the Department of Pediatrics and Medical Genetics of HSEE of Ukraine «Bukovinian State Medical University». It was considered the usage of interactive training methods among students of medical faculty, namely the method of role-playing games. The advantages of the introduction of interactive training forms in the educa-