REVIEW ARTICLE

MIECZYSŁAW KONOPACKI – THE OUTSTANDING POLISH HISTOLOGIST, ANATOMIST, AND FREEMASON ACTIVIST

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ABSTRACT

This article presents the life and work of Professor Mieczysław Konopacki, a Polish physician, freemason, social and political activist. Mieczysław Konopacki was born in 1880 in Wieluń, a town with almost 800 years of history. After passing his secondary school-leaving examinations in 1899, he began his studies at the University of Warsaw. Thanks to his diligence and commitment to research, in 1903, he received the degree of candidate of all-natural sciences at the Imperial Warsaw University. In the same year, he was arrested by the Russian authorities for his involvement in developing education in the Polish countryside and forced to move to Cracow, where he began his studies at the Faculty of Medicine of the Jagiellonian University. In 1907, he married and moved to Lviv with his wife, who was also an embryologist. There, the couple began working at the Histology Department. Also, there, in 1911, Mieczysław Konopacki obtained his doctor's degree in medicine. He was an extremely hard-working and broad-minded man. He was a member of many associations and international scholar organizations. He took an active part in many congresses and symposia. In independent Poland, Professor Konopacki was involved in the organization of science. He tried to compensate for the many years of neglect caused by the policy of the partitioners. In 1933 Professor Konopacki was elected Vice President of the Warsaw Branch of the Young Men's Christian Association. Complementing the social activity of Professor Konopacki was his activity in the Grand National Lodge of Poland. He died in Warsaw on September 25, 1939, fatally struck by shrapnel from a German bullet.

KEY WORDS: Mieczysław Konopacki, medicine, Freemasonry, politics

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Mieczysław Ferdynand Konopacki was born on April 16, 1880 in Wieluń, in the family of Bronisław and Antonina de domo Zdrojewska. After graduating from the Men's Classical Junior High School in Kalisz in 1899, where he took part in the meetings of the secret study circle (Stanisław Wojciechowski, later President of the Republic of Poland, graduated from the same school a year earlier), he began studies at the Faculty of Life Sciences of the Imperial University of Warsaw. There, under the supervision of Professor Paweł Ilyich Mitrofanov, a Russian biologist, histologist, and anatomist, he conducted his research in embryology. He studied the formation of yolk in lizard eggs. This work was recognized by the university community and was awarded a medal. Professor Mitrofanov, an academic teacher of great merit for the University of Warsaw, gave lectures and classes with students in 1886-1915 [1]. He educated many Polish embryologists and histologists during nearly thirty years of scientific work, including Jan Tur and Józef Eismond [2].

Mieczysław Konopacki's scientific career developed thanks to his diligence and commitment to the conducted research very quickly. In 1903, he obtained the degree of candidate of all-natural sciences at the Imperial University of Warsaw.

Mieczysław Konopacki, as befits a young intellectual of those times, did not limit his activity only to scientific work. He also devoted a lot of attention to social and political life. Seeing the great backwardness of the Polish countryside, he put a lot of energy into work for the development of education and popular education. The tsarist authorities considered this activity hostile to the Russian state, for which he was arrested and imprisoned in the Pawiak prison. After being released from prison, he had to leave the Russian partition. In 1903, he crossed the cordon and went to Cracow, where he began studies at the Faculty of Medicine at the Jagiellonian University. There, in the laboratories of Professor Kazimierz Telesfor Kostanecki, an outstanding anatomist and cytologist, he developed his scientific interests. While studying medicine, he also deepened his research interests under the guidance of the embryologist and biologist Professor Emil Godlewski. He researched earthworm respiration and was publishing the results of his research in the journals of the Polish Academy of Learning in Cracow [3].

In 1907, he married Bronisława Jakimowicz, born in central Russia, where her father was a doctor. She took the seeds of Polish tradition from home distant from her homeland, which she developed as a social and political activist. She was an embryologist by profession, a graduate of the Faculty of Life Sciences at the Jagiellonian University, where she was an assistant of Professor Emil Godlewski during her studies at the Anatomy Department. There, she also met her future husband, after which the couple moved to Lviv. From then on, they shared the hardships

and satisfaction of their scientific work – in Lviv and later in Warsaw – always on a vast research field, where already well-established ideas and only anticipated concepts met [4]. After moving to Lviv, the Konopacki couple started working at the Department of Histology led by professor Władysław Szymonowicz. There, too, in 1911, Mieczysław Konopacki obtained his doctor's degree in medicine. The scholarship awarded by the Polish Academy of Arts and Sciences in Krakow enabled a young couple of scientists to broaden their knowledge abroad. Together with his wife, he researched the embryonic development of animals at the Zoological Station in Trieste and in the laboratories of Professor Karl Heider and Ferdinand Hochstetter in Innsbruck. At the same time, he traveled to Brussels, where he conducted similar research under Professor Albert Brachet. He continued his studies in Munich and Vienna. Then he worked at the Zoological Station in Naples, where he studied the influence of hypertonic fluids on the development stages of sea urchins. The research results were included in his postdoctoral thesis, which he presented at the University of Lviv. After that, he was an associate professor at the Department of Histology and Embryology of the Jan Kazimierz University in Lviv for two years.

In 1914, Władysław Konopacki received his habilitation in histology and embryology based on studies on the influence of hypertonic fluids on various stages of sea urchin development, made during his stay in Naples [5]. Despite the heavy burden of duties resulting from scientific work, he belonged to the paramilitary social and educational organization established in Lviv in 1910, i.e., the Riflemen's Association. The organization, operating until 1914, was the basis for building military structures – the Polish Legions. After the outbreak of World War I, he was mobilized to form the 2nd Brigade of Polish Legions, the so-called Karpacka or Żelazna. The beginnings of the war, Doctor Władysław Konopacki, in the rank of second lieutenant, spent at the front in the Carpathians, where he participated in the transport of the wounded from Mołotkowo, and then was assigned to the military hospital in Piotrków Trybunalski. In 1916, he moved to Warsaw, where he was appointed the chair of the Department of Histology and Embryology at the University of Warsaw. He also belonged to the group organizing the Veterinary Faculty. He headed the Department of Histology and Embryology at the University of Warsaw from 1916 until the outbreak of World War II. During that time, he was the dean of the Faculty of Medicine twice.

It is worth mentioning that after the outbreak of World War I and the appointment of Doctor Mieczysław Konopacki to the army, his wife moved from Lviv to Warsaw, where she was active in charity organizations. Then, in 1916, she joined the Department of Histology and Embryology at the University of Warsaw, and from 1920 she was a volunteer there, de facto acting as an assistant.

In 1918, Doctor Mieczysław Konopacki was admitted to the Warsaw Scientific Society, initially as a full member, and from 1929 – as an ordinary member. From 1924 to 1928, he was a member of the board, and from 1935 for three years, he acted as the dean of the Faculty of Life Sciences at the University of Warsaw. During the Polish-Bolshevik war, he was the military commander at the Infant Jesus Hospital in Warsaw. In addition, he was the main organizer and lecturer at the Military Medical School in Warsaw. In 1921, he was awarded the title of full professor, and in 1927, he was appointed the dean of the Faculty of Medicine at the University of Warsaw for the first time for one year. In 1930, he was admitted to the Polish Academy of Arts and Sciences as a correspondent member and as an active member two years later. He conducted research mainly on the formation of yolk in chordate eggs, the role of follicular cells in egg nutrition, and especially on the biochemistry of development (research on amphibians). Most of them were made and published together with his wife. In terms of the use of histochemistry in embryological research, these works in Poland were pioneering [6]. The scientific achievements of Professor Władysław Konopacki include several pioneering works in the field of vertebrate embryo development, the period of which he divided into two stages differing among others the role of individual chemicals. Many of these discoveries today constitute the basis of knowledge in the dynamically developing molecular embryology.

In independent Poland, Professor Konopacki was constantly involved in the organization of science, thus eliminating the many years of neglect of the partitioning powers. In 1923, he co-founded the Warsaw Anatomical Society together with Edward Loth, Jan Tur, Mieczysław, and Leon Kryński. In 1926, at the association's first convention held in Warsaw, a new name was adopted – the Polish Anatomical and Zoological Society. The first president was a professor of comparative anatomy at the Jagiellonian University, Henryk Ferdynand Hoyer. From 1929, the society published its own magazine, "Folia Morphologica." Prof. Konopacki was a member of many international scientific organizations, actively participated in many congresses and symposia. All the time, he was very active in the Warsaw Scientific Society. As a member of the Polish delegation, in 1925, he took part in the University of Warsaw delegation trip to Tambov and Rostov-on-Don to recover university property stolen by the Russians [7]. He was also a member of the French Association des Anatomistes, and in 1931 he was the host of the Warsaw convention of this organization. In the academic year 1937/1938, he was again the dean of the Faculty of Medicine.

In 1922, he became a member of the Organizing Committee of the Legionnaires' Congress. In the same year, Professor Władysław Konopacki and his wife co-founded the National and State Union, a centrist political party associated with the Piłsudski camp. This party was eminently intellectual. Among its founders were, among others, future presidents Gabriel Narutowicz and Ignacy Mościcki and at least three Freemasons confirmed by sources: Franciszek Paschalski (Warsaw attorney), Jan Piłsudski (the Marshal's brother) and Adam Marceli Piwowar (president of Dąbrowa Górnicza). The party was associated with, among others, a group of Cracow conservatives [8]. It proclaimed

the slogan: everything in the state for the state but opposed to statism in the economy. The party promoted social solidarity and opposition to party egoism. This formation defended the equality of all religions. The National and State Union members participated in the parliamentary elections in 1922, but despite receiving 38,000 votes, they did not get any mandate. In 1928-1929, Prof. Konopacki was a member of the National Council of the Young Men's Christian Association (YMCA). This association appeared in independent Poland in the spring of 1919 with the arrival of the army of General Józef Haller from France. This army was formed in France in June 1917 and consisted of, among others, Poles – volunteers who came from America, members of the YMCA. Its formal status in the Polish Army was regulated by the order of the Minister of Military Affairs issued on November 11, 1919, which authorized the YMCA to operate in the Polish Army until its demobilization [9]. A Polish branch of the American association was established and had the right to be financed only from funds raised in the USA. YMCA transports were treated as military, similarly as military and telegraph correspondence as well as couriers. In Poland, the YMCA ran soldier's shops, organized cultural and sports events. From 1918, YMCA also operated in Poland. Shortly after the end of World War I, YMCA organized a shelter for soldiers in Cracow and a Polish Officer's House for officers. In addition, it created sports fields, ran a cinema for the military with the latest repertoire, and built the first indoor swimming pool in Cracow [10]. In 1933, Professor Konopacki was elected the vice-president of the Warsaw Section of YMCA.

Juliusz Zweibaum (Polish biologist and histologist, since 1916, assistant professor at the Department of Histology and Embryology of the University of Warsaw, the creator of the first in vitro tissue culture in Poland), in his posthumous memoir, presented Professor Władysław Konopacki's scientific achievements as follows: *Scientific works of Professor Konopacki with some exceptions have a uniform character. They revolve around two main themes: the influence of physicochemical factors on the ova of various animal groups and the biochemistry of development in terms of histochemistry. Konopacki investigated the effect of hypo- and hypertonic fluids on sea urchin eggs and found that hypertonic solutions have a different effect on the cytoplasm and the nucleus of the ovum. Under the influence of these solutions, the nuclei enter a state of division, while the division of the cytoplasm is inhibited. (...) Moreover, Konopacki was involved in analyzing the changes that occur under the influence of factors that cause the formation of the egg membrane. It acted on sea urchin eggs with chloroform, benzol, butyric acid, and acetic acid. These experiments showed that two phenomena occur in eggs under the influence of these factors: cytolysis and cytoschysis. (...). Recent studies show that microsomes have a chemical composition very similar to the chromatin of the nucleus. Konopacki also analyzed the nucleus, cytoplasm, centrosphere, and chromosomes of sea urchin eggs and embryos under the influence of various dilutions of seawater and found that the process of cytolysis and cytoschosis that takes place under these conditions is identical and under the influence of cytolytic factors. In addition, he studied the formation of developmental anomalies that arise under the influence of various dilutions of seawater (...)*

Together with Barbara Konopacka, he began a series of studies on the histochemistry of the ovum and embryos of various animal groups. With these works, he entered the field of development biochemistry, which was the subject of extensive research in the pre-war years. This work presents the research problem on the histochemical means of chemical changes in embryos during development (...). Apart from these works, Prof. Konopacki investigated the behavior of nucleic acid in the production of yolk in Loligo vulgaris. He found that in the nuclei of the follicular epithelial cells, there is a breakdown of nucleoproteins and nucleic acids into simpler compounds that pass into the cytoplasm, causing the phenomenon – then unexplained – basophilicity. (...) Prof. Konopacki also investigated glycogen's chemical and physiological role for some activities of Clavelina lepadiformis embryos and drew conclusions about the synthesis of thymonucleic acid for the nuclei of a developing embryo. The discussed works do not exhaust the entire scientific activity of Prof. Konopacki. In addition to casually developed problems in the field of classical embryology and physiological work on earthworm respiration, the deceased published a lot of research in histology, gave seminars and lectures. The histochemical approach to the problems of the organization of developing embryos is essential for understanding the nature of the organizers. Therefore, the merits of Prof. Konopacki in this field are very large. The works of the deceased are characterized by precision of execution, the diligence of elaboration, and a visible keynote, especially in the work on the biochemistry of development. They also led him to a certain synthesis, which, unfortunately, he was no longer able to formulate. (...). Prof. Konopacki was a man of progress. He approached all manifestations of life with criticism. He was free from dogma and did not recognize any superstitions in any area [11].

His activity in the Masonic Lodge is the complement of the social activity of Professor Władysław Konopacki. According to the findings of the distinguished researcher of Polish Freemasonry, Professor Ludwik Hass, Władysław Konopacki was initiated into Freemasonry in the first half of the 1920s, in one of the Warsaw lodges of the Great National Lodge "United Poles." He was entered in the General Image (list of members) under the matricular number 50. He assumed the "religious name" (organizational pseudonym) – Ferdynand Trzaska. He was a member of the Great Workshop (obediences board), holding the dignity of the 1st Great Caretaker in 1927 and 1929, and in 1928 – the Great Guardian of the Seal. In 1927, he chaired the delegation of Polish Freemasons to the Congress of the International Masonry Association (AMI). In 1926-1938, i.e., until the decision of President Ignacy Mościcki, when the Freemasons' associations were dissolved, he was a guarantor of the friendship of the Grand Lodge of Yugoslavia in the Grand National Lodge of Poland [12].

Until the outbreak of World War II, he worked at the Marshal Józef Piłsudski hospital in Warsaw. When

the war broke out, he volunteered to join the army and worked in a military hospital with great dedication. On September 25, 1939, when he was leaving for work early in the morning, he was fatally struck by a shell fragment. His wife, having tragically lost her husband, did not break down. On the contrary, she actively participated in rescuing the library and medical equipment from the burning Collegium Anatomicum of the University of Warsaw. After the cessation of hostilities, she continued the work carried out by both spouses, taught histology and embryology in secret classes at the Zaorski School, at the secret University of Warsaw, and the secret University of the Western Lands. Sharing the fate of many Varsovians, she found herself in Łódź after the war. She worked at the Institute of Hygiene of the local university while also being an assistant professor at the Department of Histology and Embryology. She participated in the reactivation of scientific organizations operating in the interwar period, including the Polish Anatomical Society. She was, like her husband, an active member of the Warsaw Scientific Society. Both daughters of Bronisława and Mieczysław Konopacki married representatives of the intelligentsia. The elder son-in-law, Władysław Trzetrzewiński (1903-1987), continued the tradition literally. After a doctorate in medicine with a specialization in radiology, he became involved in creating the Department of Radiology at the Medical Academy in Gdańsk, established in October 1945. He became the deputy of Prof. Ksawery Rowiński, the head of the department. In the academic achievements of Prof. Trzetrzewiński's, the radiology textbook (published in 1964 and 1965) deserves attention. At the time of its creation, it was pioneering, serving generations of students. The second son-in-law of professors Bronisława and Mieczysław Konopacki came from a more distant circle of the cultural elite. The multi-talented artist Stanisław Zamecznik (1909–1971) rendered outstanding service to all areas of fine arts [13]. Professor Konopacki was awarded the Independence Cross, the Cross of Valor, and the Medal of Independence for his activities for the sake of Poland's independence.

He published many scientific works, including *Untensuchungen über die Entwirkungen verdünnten Seewassers auf verschiedene Enrwicklungsstadien der Echinaideen* issued in 1918, *La micromorphologie du métabolisme dans les périodes initiales du développement du la grenouille* issued in 1926, and "Histophyschologie du développement de Loligo vulgaris" issued in the year Hitler came to power in Germany.

The main subject of research was the influence of physicochemical factors on animal ova; development biochemistry in terms of histochemistry; the hypothesis of the existence of two enzymes in the ovum that break down the yolk's substances into proteins (vitelase A) and glycogen (vitelase B) and research on the role of proteins in subsequent stages of embryo development.

Professor Mieczysław Konopacki was buried at the Powązki Military Cemetery in headquarters A8, row IV, place 1/2 [14].

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