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## B. I. Simenach: the life devoted to science

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On 20 June 2021, the laureate of the State Prize of Ukraine, the Doctor of Medical Sciences, Professor Bohdan Ilyich Simenach would be 100 years old. 45 years of life he devoted to the Professor M. I. Sytenko Institute and to the study of abnormalities of joints, in particular knee. In this area, the scientific status and the authority of the scientist was constantly growing.

Bohdan Ilyich was born on 20 June 1921 in the village Sinevidske of Skole district of Lviv region in the family of a railway official. In the summer of 1939, he graduated from Stryi Gymnasium in Lviv region, which at the time was part of Poland, and in the fall joined Stryi Pedagogical School. After graduation (1940) Bohdan Ilyich received a diploma of the teacher and worked in a specialty in a primary school, while studying at the extra-mural department of the Chemical Faculty of Lviv University. At that time there was an unusual situation with the lack of doctors: with the beginning of the World War II, the Poles mobilized young doctors to the army, and the Germans, occupying Lviv, banned Jewish doctors from practice. This forced the occupation power to organize training specialists, namely: to open a course of professional medical training, which B. I. Simenach entered in the late 1941. The course program was designed for three years, the school prepared practitioners, without the right to work abroad and engage in scientific work. Teachers of the Medical Faculty of Lviv University taught at the courses, most of the lectures (about 80 %) were in Polish, the rest in Ukrainian, only physiology was taught in Russian by a professor from Leningrad. At these courses, the young man studied for two and a half years. Here he studied along with Stanislaw Lem, who subsequently became a well-known Polish writer. At the end of 1944, after the liberation of Lviv by the Soviet Army, the work of the medical institute was restored and Bohdan Ilyich continued to study at the third year. In 1945, the 2<sup>nd</sup> Kharkiv Medical Institute was transferred to Lviv and since then they

taught subjects mainly in Russian. In 1947 Bohdan Ilyich graduated from the institute and received a specialty of a doctor. Already then he began dreaming of a career in science. He successfully passed examinations to postgraduate studies and held a competition at the Department of Pathological Physiology, but life has introduced its adjustments.

Times were hard, young doctors did not want to go to rural areas. Therefore, it was decided to send all graduates to the periphery, including postgraduate students. Bohdan Ilyich was sent to the regional hospital of the town of Drohobych (Fig. 1). Six months he studied at specialization courses of ambulance surgeons. During this period, the authorities tried to bring medical care to areas in small towns and opened the hospitals with emergency care. Bohdan Ilyich was appointed as a surgeon and chief doctor of the hospital of the village Stebnyk of Drohobych district of Lviv region, where he had to not only provide surgical assistance, but also treat typhus and solve economic issues. The hospital had a subsidiary economy, where vegetables and fruits were grown. This allowed somehow to feed patients. In the post-

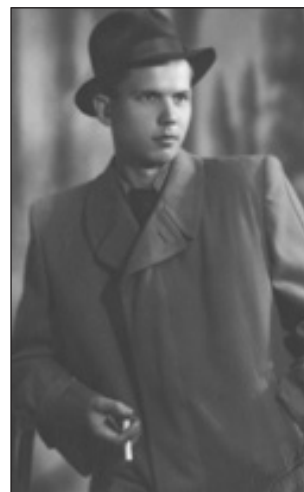


Fig. 1. Bohdan Ilyich at the beginning of his career

war years there were insurgencies in the Western Ukraine but doctors were respected.

Having graduated from the specialization courses in Gastroscopy in Leningrad, B. I. Simenich began his first scientific research on gastroscopy of resected stomach. In 1952 he was mobilized to the ranks of the Soviet Army (Fig. 2). In the Garrison Hospital of Slavuta, where Bohdan Ilyich began his military service, the young specialist continued the study, the results of which were published in the article «Gastroscopy in case of chronic dysentery».

Then there were hospitals in the towns of Stryi, Solnok and Sekesfehervar (Hungary). It was there that Bohdan Ilyich began his way in orthopedics and traumatology: he encountered a large number of post-traumatic diseases of the knee joint and chronic traumatic synovitis. Surveying and treating soldiers with this abnormality, he came to the conclusion that these diseases were not independent, but a reaction



Fig. 2. B. I. Simenach in the ranks of the Soviet army

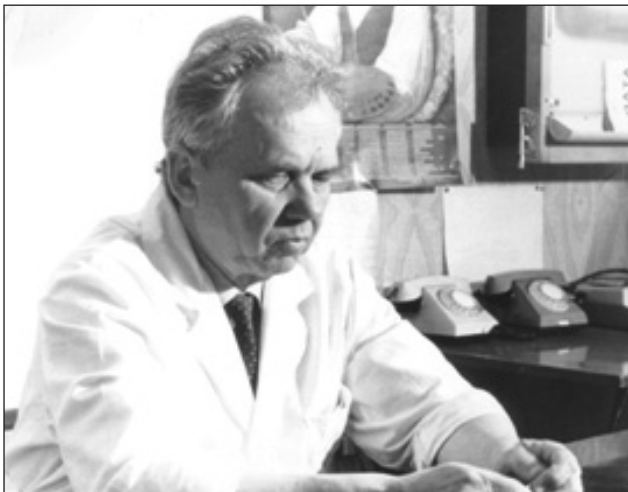


Fig. 3. Bohdan Ilyich in reflection on the next concept

to some intra-articular disorders. B. I. Simenach applied for Professor M. I. Sytenko Kharkiv Research Institute of Orthopedics and Traumatology. He discussed his ideas with a scientific consultant, an employee of the Institute, Associate Professor O. Korzh (subsequently an academician and director), who supported the military doctor. B.I. Simenach published the results of his research in an article, where he first substantiated the appropriateness of allocation of two groups among the internal injuries of the joints, namely traumatic (damage to internal bonds, cartilage, etc.) and biological (reactive inflammation). This idea became the basis for further research of the scientist, the result of which was the defense of the candidate's thesis (1964).

Director of the Institute, Professor M. P. Novachenko, who always paid a lot of attention to the training of personnel, saw in the young professional a researcher's talent and offered him a position of a scientific employee. After demobilization from the ranks of the Soviet Army in September 1966, B. I. Simenach was elected by competition for the position of senior researcher at Professor M. I. Sytenko Kharkiv Research Institute of Prosthetics, Orthopedics and Traumatology. Since that time, the life of Bohdan Ilyich was inextricably linked with the Institute. For more than three years, he performed the duties of the Academic Secretary, and in 1970 he was appointed head of the Department of Scientific and Medical Information. Bohdan Ilyich was interested in the field of management of scientific activity, classification and terminology, in which he successfully worked. The work in these areas allowed to make a conclusion about the necessity of theoretization of modern orthopedics and gradual penetration of fundamental components into orthodox and

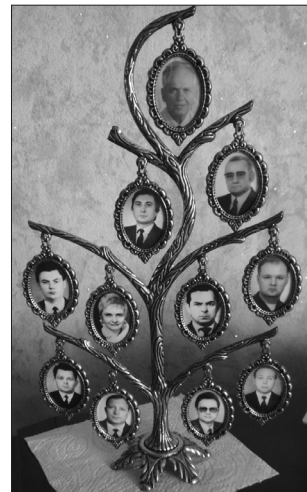


Fig. 4. B. I. Simenach and his students

traditional applied researches, which is the implementation of the innovative principle of development of medical science (Fig. 3).

The main object of scientific activity of the scientist was the pathology of the joints, in particular knee, to the study of which he devoted his life, becoming a recognized authority on this issue. In 1979, he defended his doctoral dissertation on the topic «Damage of the burso-ligament apparatus of the knee joint, diagnostics and surgical treatment (from the positions of the system approach)». Bohdan Ilyich was the initiator of research on hereditary diseases of the joints. This problem is very actual, since such illnesses make up 80 % of all diseases of the joints of non-infectious nature. The research was executed on fundamentally empirical and theoretical levels with subsequent application use. For the first time, 7 knee joint syndromes caused by hereditary tendency were separated as independent syndromes at the level of nosological form [1–8], a new concept of hereditary predisposition to the diseases of joints [9–11] was established.

The basis of studies performed by Professor B. I. Simenach and his students who continue their teacher's work today involves unconventional concepts, the methodology of the system approach, information and conceptual modeling. These technologies allowed to describe a number of substantially new ideas about a group of hereditary diseases of the joints and spine. As a result of research, a new theory of diseases of joints and spine, conditioned by hereditary tendency, was determined and a special field of orthopedics, namely orthopedic arthrology, was created [12]. On this basis, conceptual models of orthopedic arthrology [12, 13] were elaborated, arthrosing deformations [14], volumetric hyperpression of the hip joint [15, 16], scoliosis as a dysplastic problem [17], fracturology [18, 19], etc. The obtained results indicate the correctness of the intended tasks and the effectiveness of their solution. The study of Professor B. I. Simenach and his students opened the path to prevention of dysplastic arthrosis, which occurs most often (about 80 %) in a group of degenerative joint diseases, so the solution of this problem has a great social significance.

The works of Professor B. I. Simenach made a significant contribution to the development of orthopedics and traumatology, contributed to the transition of scientific research in this field of medicine to a new level, the construction of theories. For his research on the problems of abnormalities of joints Bohdan Ilyich received the State Prize of Ukraine in 1996.

Bohdan Ilyich was characterized by such great human qualities as decisiveness, justice, sensitivity, benevolence, he always enjoyed the deserved authority

among colleagues and patients. B. I. Simenach paid a lot of attention to the preparation of young scientists and generously shared with them his enormous experience. Under his guidance, 9 Candidate's and 3 Doctoral dissertations were defended (Fig. 4).

Bohdan Ilyich passed away on 7 October 2020.

Honoring his memory, students prepared and published a bibliographic index of scientific works by Professor B. I. Simenach [20].

The cherished memory of Bohdan Ilyich Simenach will remain in the hearts of his friends, colleagues and students.

**Conflict of interest.** The authors declare no conflict of interest.

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