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SCIENTIFIC HERITAGE V.G. KORENCHEVSKY, THE FATHER OF EUROPEAN GERONTOLOGY

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Abstract. The publication presents the facts of the scientific biography of an outstanding Russian scientist of world renown, professor of general and experimental pathology at the Imperial Military Medical Academy (1912–1919), long-term employee of the Lister Institute of Preventive Medicine (London), founder of the British Society for the Study of Aging, recognized founder European gerontology Vladimir Georgievich Korenchevsky. The results of a bibliographic study of his scientific heritage are presented; for the first time, a complete list of scientific works by V.G. Korenchevsky.

Key words: Vladimir Georgievich Korenchevsky; Department of General and Experimental Pathology; Imperial Military Medical Academy; gerontology; British Society for the Study of Aging; Lister Institute of Preventive Medicine; Russian scientists in exile.

НАУЧНОЕ НАСЛЕДИЕ В.Г. КОРЕНЧЕВСКОГО, ОТЦА ЕВРОПЕЙСКОЙ ГЕРОНТОЛОГИИ

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Резюме. В публикации изложены факты научной биографии выдающегося российского ученого с мировым именем, профессора общей и экспериментальной патологии Императорской Военно-медицинской академии (1912–1919), многолетнего сотрудника Листеровского института превентивной медицины (Лондон), создателя Британского общества для исследования старения, признанного основоположника европейской геронтологии Владимира Георгиевича Коренчевского. Представлены результаты библиографического исследования его научного наследия, впервые опубликован полный перечень научных трудов В.Г. Коренчевского.

Ключевые слова: Владимир Георгиевич Коренчевский; кафедра общей и экспериментальной патологии Военно-медицинской академии; геронтология; Британское общество для исследования старения; Листеровский институт превентивной медицины; русские ученые в эмиграции.

Vladimir Georgievich Korenchevsky, the future pathophysiologist and gerontologist, was born in the family of a middle-level official in the county town of Oshmyany in Vilna Province on January 27 (new style), 1880. At the age of 18, he graduated with a silver medal from the Alexander High School for Men in Riga and entered the Imperial Military Medical Academy (IMMA). Student Korenchevsky became interested in science early on. He completed his first work, *Comparative pharmacological studies of the effects of poisons on unicellular animals,* under the supervision of the most famous Russian pharmacologist of that time, professor Nikolai Pavlovich Kravkov (1865–1924). For this article, published in Russian and German, Korenchevsky was awarded the Gold Medal named after the physician and surgeon Sylvester Fedorovich Tuchemsky by decision of the Academy Conference [1, p. 61].

After graduating from the Academy with honors, Korenchevsky was appointed as a junior doctor in the 4th Grenadier Regiment, stationed in Moscow. With the outbreak of the Russo-Japanese War (1904–1905), he became the head of the chemical and microbiological laboratory of the Military Hospital N 1 in Harbin (Fig. 1). In this position, Korenchevsky was active in fighting against intestinal infections and plague [2, p. 181].

From the theater of operations, he sent scientific articles to St. Petersburg and European journals, and after the end of combat operations, he completed microbiology internship in the laboratory of Georgy Norbertovich Gabrichevsky (1860–1907) at Moscow University.

In 1908, Korenchevsky completed an internship at the Institut Pasteur in Paris in the department headed by Ilya Ilyich Mechnikov (1845–1916). Two years later, Ivan Petrovich Pavlov (1849–1936) invited Korenchevsky to improve his qualifications at the Institute of Experimental Medicine and the Department of Physiology at the IMMA.

Korenchevsky was awarded the degree of Doctor of Medical Sciences in 1909 after defending his dissertation *Gastrointestinal autointoxication* and became a private assistant professor at the Department of General and Experimental Pathology at Moscow University, headed by professor Alexander Bogdanovich Fokht (1848–1930) [1, p. 62].

For seven years (1912–1919), Korenchevsky headed the Department of General and Experimental Pathology at the IMMA, after which he joined the White movement and became assistant for the medical unit to the Commander-in-Chief of the Armed Forces of the South Russia, Lieutenant General Anton Ivanovich Denikin (1872–1947) [3, p. 94]. Together with the troops he was evacuated to Constantinople, then to Serbia and already in 1920 he settled in London, where he accepted the position of senior research fellow at the Lister Institute of Preventive Medicine. During the first five years Korenchevsky developed the problem of proper nutrition and the role of vitamins in it. He devoted the next 20 years (1925–1945) to studying hormones and the possibility of using them to delay the aging process.

On the eve of World War II, having received a donation from an automobile magnate, Korenchevsky founded the C*lub for Research on Ageing.* In 1946, he headed the G*erontological Research Unit* at Oxford University, which he led to his retirement in 1952. In July 1946, the *Club for Research on Ageing* was transformed into the *British Society for Research on Ageing (BSRA).*

In 1950, at the *First International Congress of Gerontology,* held in Liege (Belgium), t*he International Association of Gerontological Societies* was created. In recognition of Vladimir Georgievich's services, the Congress elected him as a *founder and a life member of the governing body* [4, p. 194].

Korenchevsky devoted the last seven years of his life (1952–1959) to summarizing his scientific results, but his main book, *Physiological and Pathological Ageing*, was published posthumously (1961). In his obituary (Fig. 2), Edmund Vincent Cowdry (1888–1975), founder of the Gerontological Society of America, said of Korenchevsky: "*He became in truth the father of gerontology, not simply in Britain but in the whole world*" [5, p. 1392].

In addition to his scientific works, Vladimir Georgievich left several articles on the religious life of the Russian diaspora. In British journals, he called for donations to support scientists who remained in Soviet Russia [6]. He carefully studied and analyzed the works on gerontology published in his homeland.

The publications of Vladimir Georgievich Korenchevsky were published in five languages, and the data on them had never been collected together. The authors considered it their duty to fill this gap in the history of science. (The reader will find more detailed information about the life and work of V.G. Korenchevsky in the book by V.Kh. Khavinson et al. *Vladimir Korenchevsky — the founder of European gerontology,* the publication of which is scheduled for 2023).

Fig. 1. V.G. Korenchevskiy (on the left) is the head of the chemical and microbiological laboratory of the Military Hospital N 1 in Harbin (1904)

For this purpose, we conducted bibliographic research, during which many specialized resources were used. The starting point was the reference and bibliographic apparatus of the library of the Military Medical Academy. An appeal to the General Alphabetical Catalogs, in Russian and foreign languages, allowed us to identify 50 publications. Among them, individual reprints of V.G. Korenchevsky's articles published in scientific journals prevailed. Thus, a circle of publications was formed in which the scientist predominantly published: *Archives of Biological Sciences, Russian Physiological Journal, Military Medical Journal, Russian Doctor.* Subsequently, the contents of some of these journals were reviewed de visu, in order to avoid omissions.

The next step in the search was to look through the available online catalogues of other libraries: the National Library of Russia, the Russian State Library, and the Central Scientific Medical Library. This allowed us to add several works to the list that were not in our collection.

Before 1921, Korenchevsky's foreign publications were published mainly in German, occasionally in French, and, as a rule, these were not original articles, but reprints of his Russian-language works — in full or as an abstract. Some difficulties were created by the fact that the spelling of Korenchevsky's surname and initials in these languages differs: W. Korentschewsky in German and French and V. Korenchevsky in English.

Publications were found in *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. 1. Abt. Medizinisch-hygienische Bakteriologie; Virusforschung und Parasitologie. Originale; Deutsche medizinische Wochenschrift; Zentralblatt für allgemeine und experimentelle Biologie,* etc. Beginning in 1920, Korenchevsky published his scientific works almost exclusively in English, and the few socio-political texts in Russian.

The largest number of Korenchevsky's English-language publications were collected in *PubMed*, a free search engine for biomedical studies created by the National Center for Biotechnology Information (*NCBI*): a query for the keyword "KORENCHEVSKY" yielded exactly 100 results, of which a small portion were articles about Korenchevsky, and the rest was his own writings.

However, *PubMed* does not reflect the entire global flow of biomedical publications, and, in addition, the

chronological depth of reflection varies for different editions. In particular, numerous articles by Korenchevsky published in one of the oldest and most authoritative natural science journals, *Nature*, are missing from this abstract database. We found them thanks to a free scientific search engine launched in 2004, *Google Scholar.* And then in the full-text archive of the journal (https://www.nature.com/nature/volumes) we were able to get acquainted with the full texts of Korenchevsky's works, which are publicly available. Articles published in The *Journal of Pathology and Bacteriology* were similarly identified. In addition, a search in *Google Scholar* led us to an article by Kathleen Hall in this journal, *Obituary notices of Deceased Members: Vladimir Korenchevsky. 30th January 1880 — 9th July 1959,* which contains a list of Korenchevsky's works (Fig. 2) [7]. Having compared it with ours, we discovered a number of gaps. But Hall's list also lacked some works that were already included at that time in our list.

And lastly, the final stage was reviewing the lists of references in Korenchevsky's own works, primarily in his posthumous monograph, which became a summary of all his scientific achievements in the field of gerontology.

The list of publications of V. G. Korenchevsky that given below (in *NLM* style) is currently the most complete in the world.

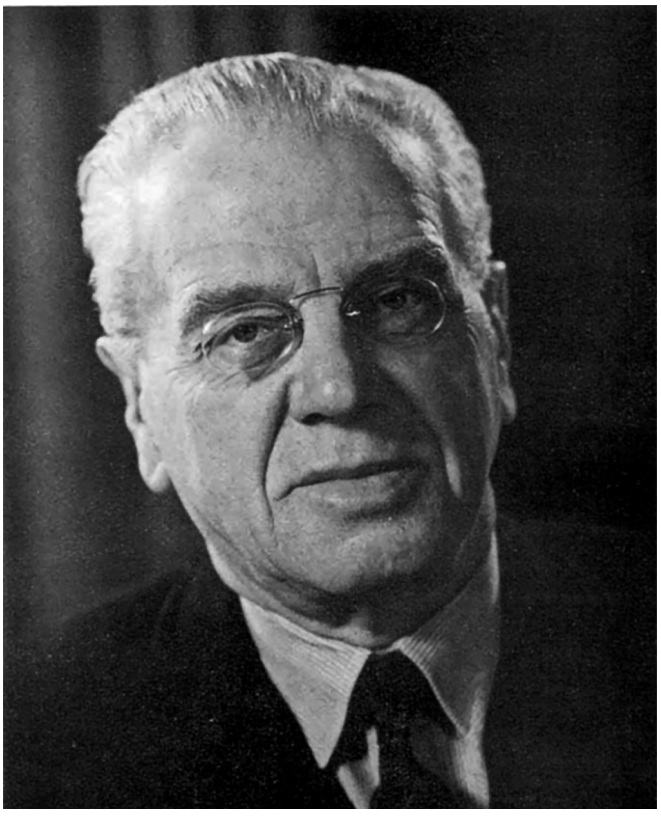

Fig. 2. V.G. Korenchevskiy (photo from the obituary in the Nature journal, 1959)

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ADDITIONAL INFORMATION

Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

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