

## Vladimir Mikhailovich Bekhterev

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*V.M. Bekhterev (1857–1927) was an outstanding Russian neurologist, psychiatrist, psychologist, morphologist, physiologist, and public figure, who authored over 1000 scientific publications and speeches. At the beginning of the twentieth century he created a new multidimensional multidisciplinary scientific branch — psychoneurology, which included the objective knowledge of the anatomy and physiology of the nervous system, psychology, psychiatry, neurology, philosophy, sociology, pedagogy, and other disciplines. Psychoneurology in V.M. Bekhterev’s understanding has furthered the introduction into the idea of a “biosocial” essence of man of a third — psychological — component, thus having created a “biopsychosocial” model in the interpretation of human diseases.*

**Keywords** V.M. Bekhterev, psychoneurology, St. Petersburg

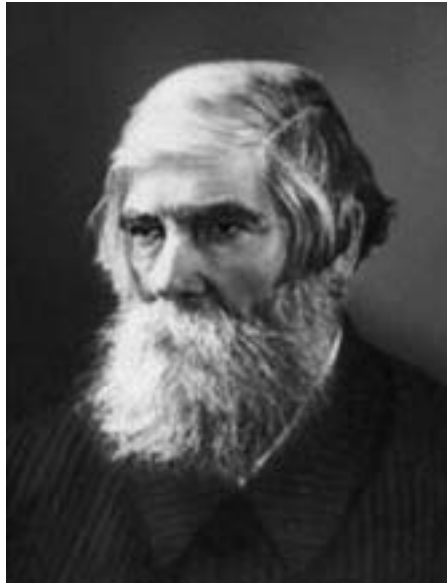
*“There are only two persons who know the anatomy of the brain perfectly – God and Bekhterev.”*

— F. Kopsch

The year 2007 marks the 150<sup>th</sup> anniversary of the birthday of Bekhterev, a scientist of encyclopedic knowledge, who may be considered a neurologist, psychiatrist, morphologist, physiologist, psychologist, and founder of the Russian school of psychoneurologists. Vladimir Mikhailovich Bekhterev (Fig.1) was born on January 20, 1857, in the village of Sorali, Yelabuzhski Uyezd (District), Vyatskaya Government (Province), the present village of Bekhterevo, Republic of Tatarstan. His father, Mikhail Petrovich Bekhterev, was a local police officer. His mother, Maria Mikhailovna, daughter of a titular counselor, was educated at a boarding school where the girls were taught, among other disciplines, music and French. There were two other sons in the family — Nikolay and Alexander — who were six and three years older than Vladimir, respectively. In 1864 the family moved to the town of Vyatka, where the head of the family died from consumption a year later. The family found themselves in a difficult financial position; nevertheless, all the sons received higher education.<sup>1</sup> In 1873, at 16 years of age, Bekhterev entered the Medical Surgical Academy in St. Petersburg. Soon afterwards he suffered a mental derangement — “severe neurasthenia” as diagnosed by himself — that was probably caused by the fact that the young provincial suddenly found himself in the absolutely strange environment of a capital city. However, a 28-day course of treatment at the Academy Psychiatric Clinic restored his health. It was probably due to these circumstances that as a fourth-year student, he chose his speciality, notably nervous and psychiatric diseases, although in his

<sup>1</sup>Archives of the V.M. Bekhterev memorial museum.

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**Figure 1.** V.M. Bekhterev (1857–1927).

autobiography he explained his choice by the fact that it gave him an opportunity to be closer to social life (Bekhterev, 1928). As a last-year student, Bekhterev took part in the 1877–1878 Russian-Turkish war in the “Ryzhov brothers shifting sanitary group.” The whole group consisting of 12 persons included 8 students of the Medical Surgical Academy.



**Figure 2.** Main building of V.M. Bekhterev Psychoneurological Research Institute, Bekhterev Street 3, St. Petersburg.



**Figure 3.** V.M. Bekhterev Memorial Museum.

Under the pseudonym of “Sanitarian,” Bekhterev sent his reports to the *Severny Vestnik* (*Northern Herald*) (Bekhterev, 1877). In 1878, ahead of schedule, he successfully passed his final examinations and stayed to continue his training at the Professor Institute of the Academy.

In 1881 he defended his dissertation entitled *The Experience of a Clinical Study of Body Temperature in Some Forms of Mental Illness*. It was the first with respect to psychosomatics in scientific research in Russian psychiatry. On 20 November that year, he was habilitated as privat-docent (associate professor). In 1883 Bekhterev was elected Full Member of the Italian Society of Psychiatrists and was awarded the silver medal by the Society of Russian Doctors for his study “About Forced and Compulsive Movements in Patients with Destructions of Certain Parts of the Central Nervous System.”

As a contender for further training abroad, Bekhterev presented 58 papers on different issues of experimental research and clinical pictures of nervous and psychiatric diseases to the Competition Committee. On June 1, 1884, the academy committee made the decision to send him to Germany on his first scientific trip. Bekhterev attended lectures by K. Westphal (1833–1890), C. Ludwig (1816–1895), E. Du Bois-Reymond (1818–1896), and other noted German scientists who studied the nervous system. Later, in Leipzig, he worked with the most prominent neurologist and morphologist of the period, P. Flechsig (1847–1929) to whom, soon afterwards, he dedicated his first fundamental monograph *Conduction Paths in the Spinal Cord and Brain*. It was also in Leipzig that he began to study psychology at the laboratory of the famous W. Wundt (1832–1920). In December 1884, Bekhterev received a formal invitation from the Russian Minister of Public Education, I.D. Delyanov (1818–1897), to chair the Department of Psychiatry at the University of Kazan. Bekhterev accepted the invitation having laid down several terms, one of which was to allow him to fully complete the program of his scientific trip. From Leipzig, Bekhterev went to Paris where he studied the work of the great J.-M. Charcot (1825–1893), subsequently he went to Munich and completed his trip in the summer of 1885 by visiting the clinic of Professor T. Meynert (1833–1892) in Vienna.

## Kazan Period

In the autumn of 1885 Bekhterev began his work at the University of Kazan. He reorganized the Department of Psychiatry and, shortly afterwards, founded Russia's first psychophysiological laboratory, where he began to study the morphology of the nervous system. During his work in Kazan, Bekhterev made an important contribution to science by his discoveries and achievements in the field of anatomy and physiology of different structures of the brain and spinal cord. These studies were summarized in the first edition of his monograph *Conduction Paths in the Spinal Cord and Brain* (1893). The second edition came out three years later, considerably revised and supplemented, including three times as many pages and 302 drawings of brain specimens. This book is an invaluable collection of empirical material obtained by the author himself as well as by other researchers of the time. The German Professor of Anatomy F. Kopsch (1868–1955) asserted: "There are only two persons who know the anatomy of the brain perfectly — God and Bekhterev." In 1892 Bekhterev took the initiative to found the Kazan Neurological Society, and in 1893 he founded the *Nevrologicheskoy Vestnik* (*Neurological Herald*), remaining its editor for many years thenceforth.

## Return to St. Petersburg

On September 26, 1893, Bekhterev succeeded his mentor I.P. Merzhelyevsky (1838–1908), who was granted a long-service pension, as head of the Department of Psychic and Nervous Diseases at the Military Medical Academy in St. Petersburg and became, simultaneously, director of the Clinic of Mental Diseases at the Military Hospital where the department was located. He continued the studies started in Kazan, publishing results in a seven-volume *Foundations of Knowledge about the Functions of the Brain* in 1903–1907. This 2500-page work presents the analysis of the functions of different parts of the nervous system. The book was translated into German in 1909.

In 1896, in St. Petersburg, Bekhterev founded the Review of Psychiatry, Neurology, and Experimental Psychology (*Obozrenie Psikiatrii, Nevrologii i Experimentalnoi Psikhologii*), and in 1897, at his initiative, a newly built Clinic of Nervous Diseases at the Military Medical Academy (2 Lesnoy Prospect, St. Petersburg) was inaugurated with a special operating room for surgical treatment of certain nervous and mental diseases. In 1899 Bekhterev was elected Member of the Military Medical Academy and was awarded the Gold Medal of the Russian Academy of Sciences. A year later, in 1900, he was awarded the Baer Prize of the Russian Academy of Science for his monograph *Conduction Paths in the Spinal Cord and Brain*. The same year he was elected president of the Russian Society of Normal and Pathological Psychology and Professor at the Department of Nervous and Mental Diseases at the Women's Medical Institute.

During the winter of 1905–1906 he was Acting Chief of the Military Medical Academy. In his autobiography, he described that period of his life as follows: "My mission was to lead 'successfully' the Academy, a military institution, through the storm and rush of the revolution. I can say that the mission was accomplished worthily, however, it would be out of place to describe here in detail all the incidents that occurred in the Academy at that time" (p. 17). The Minister of War proposed Bekhterev to take up his position "once and for all ... remaining, at the same time, Head of the Department and Director of the Clinic." But Bekhterev rejected the proposal, because at that time his scientific interests were focused on the study of psychology: he proposed to establish a Psychoneurological Institute for the first time in 1903.

At the turn of the twentieth century, Bekhterev, being author of fundamental works on anatomy (Bekhterev, 1894–1896) and physiology of the brain (Bekhterev, 1903–1907) that

had brought him worldwide recognition, tried to solve the problem of objectification of psychology as a key to the understanding of human mental activity in the normal and pathological state. By the time the Psychoneurological Institute was founded, Bekhterev had formulated and popularized the idea that man should be regarded as “a single whole” or “a biosocial entity” whose understanding requires the study of human consciousness and psychology. To this purpose a Psychoneurological Institute was founded in St. Petersburg in 1907. The same year Bekhterev was conferred the title of a Honored Ordinary Professor.

In the next four years, full of troubles and hardships connected with the establishment of the institute, Bekhterev completed his three-volume *Objective Psychology*. The institute's first buildings were erected in the so-called Tsarsky Gorodok (Tsar's Town) beyond the Nevskaya Zastava (Neva Gate) district in 1911. They were designed by the court architect R.F. Meltzer (1860–1943), a specialist in constructing medical facilities. In the same year, Bekhterev published his monograph *Hypnosis, Suggestion, and Hypnotherapy and Their Therapeutic Significance*.

In 1912 the Psychoneurological Institute was supplemented with the Experimental Clinical Institute for the Studies of Alcoholism. A year later the international scientific community decided to reorganize the latter into an international scientific center, but the plan was never realized due to the beginning of World War I. On January 19, 1913, the Psychoneurological Institute Council unanimously elected Bekhterev president of the institute for a five-year term, and on January 24 the Council Proceedings were sent for approval to the Ministry of Public Education (Akimenko and Shereshevsky, 1999–2002).

In September and October of the same year Bekhterev took part in the “Bailis trial,” which was widely discussed in Russia. He repeated the psychiatric examination and established the innocence of Mendel Bailis, who was accused of committing a ritual murder of the 13-year old Orthodox boy Andrey Yushchinsky (the results of the initial examination made by Professor I.A. Sikorsky did not deny such a possibility). The jury absolved Bailis.<sup>2</sup> The Bailis examination has come into the annals of science as the first forensic psychological and psychiatric examination in Russia.

Immediately after Bekhterev's appearance at the “Bailis trial,” on October 5, the Psychoneurological Institute received an answer from L.A. Kasso (1865–1914), the Minister of Public Education, stating that the Minister did not consider “the possibility to confirm the appointment of Private Councillor Academician Bekhterev as President of the Institute for another five-year term” (Akimenko and Shereshevski, 1999–2002). Simultaneously, Bekhterev was fired from the Military Medical Academy and the Geneva Medical Institute. The event was the beginning of hard times for Bekhterev, but he had no time to give way to despair since all his energy and knowledge were directed at establishing the institute and solving the “objective psychology” problem.

During World War I Bekhterev promoted the reorganization of the Psychoneurological Institute into a Military Hospital with a first-rate neurosurgical unit that subsequently was reorganized into the first Russian Neurosurgical Institute. In 1916 the teaching departments of the Psychoneurological Institute were reorganized into the Private University of Petrograd (i.e., St. Petersburg) consisting of four departments — General Teaching Department, Pedagogical Department, Department of Law, and Medical Department. The specificity of its curriculum was a combination of special and comprehensive general education. Bekhterev managed to actualize his tremendous plan (Akimenko & Shereshevsky, 1999–2002).

<sup>2</sup>Russian State Historical Archives

## The years after the 1917 Revolution

Bekhterev accepted the revolution of 1917, and in December of that year, he began to work at the Scientific Medical Department of the People's Commissariat (i.e., Ministry) of Education. In 1918 he became a member of the Commissariat Scientific Council and managed to found the Institute for the Study of the Brain and Mental Activity (the Brain Institute) where he initiated intensive research within the framework of reflexology, a new branch of science introduced by him. The same year his monograph *General Foundations of Reflexology* was published.

In 1918 the Psychoneurological Institute at the Private University of Petrograd received the official status of 2<sup>nd</sup> University of Petrograd. By that time, the number of university graduates had increased to about 12,000 persons. In 1919, however, the higher school system in Petrograd was reorganized, and, as a result, the Department of Law and the Pedagogical Department were incorporated into the 1<sup>st</sup> University of Petrograd; the Medical Department was reorganized into the State Institute of Medical Knowledge; the Chemical Pharmaceutical Department into the Chemical Pharmaceutical Institute; and the Zoo-Veterinary Department into the Veterinary Zootechnical Institute. Thus, the system of training at the University of the Psychoneurological Institute created by Bekhterev turned out to be so perfect that, when necessary, it allowed reorganizing individual departments into independent higher medical schools without significant difficulties (Akimenko & Shereshevsky, 1999–2002).

On January 1, 1920, Bekhterev addressed all physicians worldwide by the press expressing his protest against the food embargo against Russia initiated by the Antante states. The same day this address was also transmitted abroad by the radio. This address by a world-famous scientist had a certain effect on the international community, and, after a time, the newspapers announced that the embargo was removed.<sup>3</sup>

From 1920 until his death, Bekhterev was a Deputy of the Petrograd Soviet (Council) where he took an active part in the work of the Standing Committee of Public Education.

In 1921 he managed to convince the authorities of the necessity to reorganize the system of facilities for scientific research of the Psychoneurological Institute into the Psychoneurological Academy the president of which he was subsequently elected. The same year he published the monograph *Collective Reflexology*.

In their memoirs, Bekhterev's associates and relatives mentioned his incredible capacity for work. Between his lectures he never took a rest but conducted hypnosis sessions in the adjoining auditorium. He was constantly writing something, even if on journey. He did not sleep more than five or six hours a day, usually going to bed at 3 a.m. After awakening, often still in bed, Bekhterev began working on his manuscripts. He was a modest and undemanding man. Exterior living conditions meant nothing for him and his work. Three times a week Bekhterev consulted his patients at home from 8 a.m. until late at night (up to 40 persons during the evening).

Bekhterev's brilliant abilities, inquisitive mind, unbending persistency in achieving his goals, and incomparable capacity for work were directed at solving consistently the most difficult problems of medical theory and practice related to the study, treatment, and prevention of nervous and psychiatric diseases.

<sup>3</sup>Archive of the V.M. Bekhterev memorial museum.

### V.M. Bekhterev's Contribution to the Development of Neurology

Today, the bibliography of Bekhterev's works numbers over 1000 published papers and speeches including fundamental studies as *Conduction Paths in the Spinal Cord and Brain* (1896–1898) and *Foundations of Knowledge on the Functions of the Brain* in seven volumes (1903–1907). About 170 studies are dedicated to clinical issues, diagnosis, and treatment of nervous diseases. His works can be conditionally sorted into two groups. The first group includes his pioneer descriptions of nervous diseases, many of which became known as “Bekhterev's diseases.” The second group includes the descriptions of numerous clinical symptoms and reflexes that were of diagnostic significance. Bekhterev pioneered in the description of over ten new diseases, 15 new reflexes, and many other diagnostic techniques.

Bekhterev's basic works that summarize his observations in neurology are *Nervous Diseases in Separate Observations* (1894) and *General Diagnostics of Nervous Diseases* (1911). They are remarkable for the author's subtle power of observation, profound analysis of symptoms, and wide use of data obtained in related disciplines, particularly in anatomy and physiology. The complex methods of study of nervous diseases he applied enabled not only the improvement of diagnostics but also the discovery of a number of new, formerly unknown diseases. As an example we mention Bekhterev's “Numbness of the Spine with its Curvature as a Specific Form of Disease” (1892). According to Bekhterev, the factor causing this affliction is a lesion of spinal roots and tunics. He consistently vindicated the nosological independence of this form of pathology. He believed that the “spinal numbness” he had described, differed considerably from the disorder described by A. Strümpell (1897) and P. Marie (1898), although in daily practice the disorder is known as the “Strümpell-Marie-Bekhterev's disease.”

Other disorders described by Bekhterev, which are worth mentioning, are “syphilitic disseminated craniospinal sclerosis” (1896), “choreic falling sickness” (1897), “apoplectic hemitonia” (1899), “acutely developing movement disorder in drunkards with cerebellar ataxia” (1900), and reflex epilepsy (1914).

Of the numerous clinical symptoms and reflexes described by Bekhterev, I mention the eye (1901) and acousticopalpebral (1905) reflexes, the “ulnar nerve phenomenon” (1926), the carpal-phalanx reflex (1902), the acromial, or apical, reflex (1902), and the scapulohumeral reflex (1899). The Mendel-Bekhterev reflex, the special diagnostic value that is revealed in cases absent of Babinski's reflex, became customary in clinical research. Bekhterev demonstrated this symptom in February 1901 at a scientific meeting for clinicians of mental and nervous diseases, which was recorded in its published transactions.

In myelitis localized above the lumbosacral intumescence, Bekhterev described three reflexes: the extension (1900), flexor (1900), and adducting reflex of the leg (1927). In 1927 he wrote:

In 1910 P. Marie and C. Foix described the defense reflex (réflexe de défense) and later on, in 1912, the so-called spinal automatism reflexes (réflexe de l'automatisme médullaire). However, the same reflex phenomena had been described by me much earlier in works published in the “Review of Psychiatry” in 1900, No. 9, and in 1905 in the same “Review”, p. 771.” (Bekhterev, 1927)

More detailed information on Bekhterev's contribution to the development of Russian and world neurology can be picked up from his scientific biography published by L.R. Grote in Germany in 1927 (Grote, 1927).

### After the Death of V.M. Bekhterev

In 1927 Bekhterev was conferred the title “Honoured Scientist.” On December 24, 1927, during the work of the 1<sup>st</sup> All-Union Congress of Neurologists and Psychiatrists in Moscow where Bekhterev made a presentation, he suddenly died. The circumstances of his illness within 24 hours, inadequacy of therapy applied, peculiarities of the postmortem examination (only the brain was extracted and examined), hasty cremation of the body in Moscow, and subsequent 30-year-long neglect of the scholar suggest that his death was violent. The urn with his ashes was kept in the Bekhterev Memorial Museum for many years, and it was only in 1971 that the urn was buried in one of the St. Petersburg (Leningrad at the time) cemeteries in the corner known as the “Literaturnyie Mostki” (Literati’s Footbridge). The tomb monument was designed by the architect M.K. Anikushin (1917–1997).

“The Classified Catalogue of Academician V.M. Bekhterev’s Works and Speeches Published in Russian” assembled by O.B. Kazanskaya and T.Ya. Khvilitsky in 1954 contains about 1000 titles. These works reflect Bekhterev’s discoveries in the morphology and physiology of the nervous system, the description of 19 new forms of diseases in psychoneurology, his invention of many new methods of diagnostics and treatment, etc. It is known that Bekhterev made about 1000 forensic psychiatric examinations. In 1926, the *Vestnik Znaniya* journal (*Knowledge Bulletin*) published a list of institutions and journals founded on the initiative of Bekhterev and with his direct participation. The list includes 33 institutions and 10 journals (Table 1). Later studies of his activity have allowed adding 17 institutions and 2 journals to the list. However, the assembling of Bekhterev’s bibliography has not yet been finished and his complete works have not been published.

In 1957, the year of his 100<sup>th</sup> birthday, the street where the Psychoneurological Institute is located was named Bekhterev Street, and in 1960 a monument designed by the sculpture M.K. Anikushin was erected in front of the main building of the institute on the wall of which a memorial plaque was placed reading: “The founder of the Psychoneurological Institute Academician V.M. Bekhterev worked here from 1908 until 1927.” Since 1925 the institute (now the St. Petersburg V.M. Bekhterev Psychoneurological Research Institute) bears his name.

**Table 1**

List of journals founded on the initiative and with direct assistance of V.M. Bekhterev

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1892 – <i>Neurological Herald (Nevrologichesky Vestnik)</i>
1895 – <i>Review of Psychiatry, Neurology, and Experimental Psychology (Obzrenie Psikhiiatrii, Nevrologii i Experimentalnoi Psikhologii I Gipnotizma)</i>
1897 – <i>Works of the Clinic of Mental and Nervous diseases (Trudy Kliniki Dushevnykh i Nervnykh Bolezney)</i>
1903 – <i>Psychology, Criminological Anthropology and Hypnosis Herald (Vestnik Psikhologii, Kriminalnoy Antropologii i Gipnotizma)</i>
1919 – <i>Analysis and Education of Personality (Voprosy izucheniya i vospitaniya lichnosti) Analysis of Labour (Voprosy izucheniya truda) Psychology and Reflexology of Labour (Voprosy Psikhofiziologii i Reflexologii Truda) Pedological Herald (Pedologichesky Vestnik)</i>
1924 – <i>Knowledge Bulletin (Vestnik Znaniya)</i>
1925 – <i>Review of Psychiatry, Neurology and Experimental Psychology, Now Reflexology (Obzrenie Psikhiiatrii, Nevrologii i Experimentalnoi Psikhologii, Nyne Reflexologii)</i>

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Note. List published in *Vestnik Znaniya*, 1926. No.6.



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- Archives of the V.M. Bekhterev Memorial Museum (Arkhiv memorialnogo muzeya V.M. Bekhtereva pri Sankt-Peterburgskom psychonevrologicheskom institute im.V.M. Bekhtereva) Fond VI, delo 29-A. Delo Beilisa. *Odessky Ponedelnik (gazeta)*. 1913. 155 p.
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- Bekhterev VM (1903–1907): *Osnovy Ucheniya o Funktsiyakh Mozga*. V.1-7. Sankt-Peterburg.
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