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Vladimir Mikhailovich Bekhterev (1857-1927)

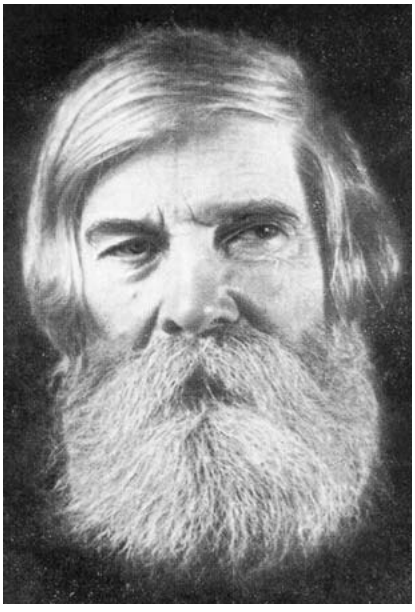

Fig 1 Vladimir Mikhailovich Bekhterev (1857–1927)

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The Russian neurologist, psychiatrist, psychologist, physiologist and morphologist Vladimir Mikhailovich Bekhterev was one of the prominent scientists of his era. He played a crucial role in the study of the brain's organization: neurophysiology and neuropathology, the objective study of psychological phenomena, and the establishment of behaviorism as a distinct school in psychology. Through atwist of fate Bekhterev's name and scientific contributions have been neglected and almost consigned to oblivion.We would like to correct the historical injustice inflicted on this outstanding person. In his time, researchers used to say: "Only two know the mystery of brain structure and organization: God and Bekhterev" [6].

Bekhterev's name is connected with 13 eponymousconcepts; the most famous of these are Bekhterev's disease - a chronic and progressive autoimmune disease characterized by inflammation and eventual immobility of a number of joints, Bekhterev's nucleus – (the superior nucleus of the vestibular nerve); and Bekhterev' nystagmus – (nystagmus that develops after the destruction of the labyrinth). In addition, he described a few reflexes, such asBekhterev's acromial reflex – (a physiological, deep muscle reflex); a variant of Galant's biceps reflex; and Bekhterev's pectoralis reflex – (a stretch reflex of the pectoralis muscle).

Vladimir Mikhailovich Bekhterev was born in 1857 in a small village between the great bend of the Volga River and the foothills of the Ural Mountains. His medical career began fortuitously. In 1866 he entered the Gymnasium, where he studied for seven years until at the age of 16 he was accepted at the Military Medical Academy in St. Petersburg. Initially he was not interested in studying medicine, but by chance he heard about a call for candidates to study at this institution. He decided to fill in the required forms and to his surprise he was accepted. He graduated from the medical academy at the age of 21 (in 1878), and within three years he wrote his doctorate dissertation about the relationship between somatic functions and mental status [1, 8].

In 1884 Bekhterev went to study in Berlin and Paris. He had started out with an interest in neurophysiology, leading him to the laboratory of Flechsig in Leipzig, where Bekhterev described the superior vestibular nucleus, which still bears his name. Among many subsequent contributions, Bekhterev identified the central tegmental tract, the connections of the inferior olive, the component fibers of the cerebellar peduncles and the nuclear complexes in the reticular forma-

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tion of the tegmentum. While abroad, Bekhterev also visited famous scientists like Meynert, Westphal and Charcot, and he studied under Wundt [1, 2, 8].

Upon return to his Russian homeland in 1885, he was already well known; he accepted a Chair in Psychiatry and an appointment to a psychiatric clinic in Kazan, positions in which he servedfor the next 8 years. The fruits of his scientific work were more than a hundred papers on various aspects of the anatomy and neuropathology of the nervous system. A few articles written during those years became world-famous, including one relating to "spine numbness" – later called Bekhterev's disease - and two describing pathways in the brain (one about "the nerve fibers which cause the pupil to narrow" and "on localization of a center for the iris and for contraction of the eye muscles", the other describing the function of the central gray matter around the third ventricle) [2].

In 1893 Bekhterev left Kazan and moved to St. Petersburg, where he joined the Military Medical Academy as professor and director of the clinic for mental and nervous diseases. During the following 21 years Bekhterev showed the full measure of his stature as a thinker, investigator, teacher, and organizer of research in neurology and social biology. Functional anatomy of the brain, experimental psychology and clinical neurology were three fields where Bekhterev carved out a place for himself. He was extremely versatile in his academic and clinical interests and fields of research, which embraced even hypnosis and psychosurgery [1, 6].

Bekhterev's book on "Reflexology" (which was translated into German and English) constituted a synthesis of more than thirty years of research, reported in 135 papers. The principal method used by Bekhterev was to isolate the subject in a chamber, exposing him to various stimuli, and recording the subject's reactions, particularly the motor reactions of the limbs, by means of elaborate mechanical and electrical apparatus [1]. A favorite term in Bekhterev's laboratory was "associative reflex", which in Bekhterev's own words is simply another name for the more familiar "conditioned reflex", the term used in Pavlov's laboratory [1]. In his approach to the behavioral sciences, Bekhterev assigned equal validity to two branches of psychology: a subjective one, of which the basic method was introspection, and an objective one. He developed his own approach – reflexology - as a diagnostic method in mental diseases and for treatment of patients. During his life Bekhterev wrote more than 700 scientific papers and 10 books.

In addition to his scientific career, Bekhterev took part in the infamous 'Mendel Beilis blood libel trial' held in Moscow in 1913, as an expert witness for the defense. During the period of Tsarist rule Bekhterev was a courageous social critic; he was arrested and his professorship was suspended because he persistently supported the students' protests against the rigid regulations held in the Military Academy [5, 6].

Bekhterev suddenly died in Moscow on 24 December 1927, under suspicious circumstances, which caused many rumours and speculations. It was thought that Bekhterev was poisoned by secret police agents, a short time after he had examined Stalin as a neurological consultant for his atrophic left hand, also diagnosing him as a paranoid [3–5, 7]. Following Bekhterev's death, his name and works were completely deleted from textbooks and scientific literature, by Stalin's order [5]. Only recently has there been a new revival of interest in Bekhterev's scientific accomplishments [7].

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