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Special article

Professor Max Kassowitz (1842–1913) of the University of Vienna

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Abstract

Historical research allows the rectification of an undeserved historical neglect for scientists of international renown in their time. With new biographical details, the present article reconstructs the life and work of Professor Max Kassowitz, a key figure in pediatric medicine and neurology in turn-of-the-century Vienna. Kassowitz, an academic pediatrician of humble Jewish-Bohemian origins, left valuable contributions on congenital syphilis and the treatment of rickets and dental diseases in children. A child prodigy, he graduated from the University of Vienna at the age of 21. From 1881 until his retirement in 1906 he headed the Public Children's Institute, which he expanded by adding departments of diverse specialties. He assigned the neurology clinic to the young Sigmund Freud; from that period date the latter's landmark papers in pediatric neurology. Kassowitz published 250 papers and a dozen voluminous monographs on various biomedical themes, including osteogenesis, infectious diseases, and immunity. Older sources testify to his remarkable critical and diagnostic ability. Kassowitz considered the invigorating effects of alcohol one of the biggest errors of science; he and his wife Emilie were actively involved in the Anti-Alcohol Movement. During the last two decades of his life, he became immersed in issues of biological philosophy. On the basis of his scientific accomplishments, Max Kassowitz was a pioneer who merits recognition as having played a vital role in the advancement of medicine in Central Europe.

Keywords: Max Kassowitz, Sigmund Freud, History of Medicine, Pediatric Neurology, University of Vienna

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Max Kassowitz (Fig. 1) was an influential figure in European academic pediatrics around the fin-de-siècle. He gained international reputation for his fundamental work on congenital syphilis, on the introduction of phosphorus to treat rickets, and for his effort to fight dental diseases in children. Yet, there is only a brief biographical note [2] in the modern biomedical literature, published in Hebrew. He was born on 14 August 1842 in Pressburg (today Bratislava, Slovakia), the eldest child, among four boys and two girls, of Ignaz Kassowitz (1818–1875), a Jewish-Bohemian tailor, and Katharina Kassowitz, née Pollak (1821–1878).

A valuable source of information on the family are the collected papers of Kassowitz's youngest daughter, Antonie Kassowitz-Stolper (1890–1988), a graduate of the Department of Philosophy of Friedrich Wilhelm University in Berlin [12]. During World War I, Antonie ('Toni') volunteered as an assistant nurse for the Red Cross at the First Surgical Clinic of the University of Vienna, headed by neurosurgeon Anton von Eiselsberg (1860–1939). With her husband, the respected author and publisher in economics Gustav Stolper (1888–1947), they fled Germany in July 1933, six months after Hitler's ascension to the Chancellery, and emigrated to the United States (1933–1975, 1983–1988) and Canada (1975–1983).

Max Kassowitz was a child prodigy. He graduated from the German Gymnasium with honors when he was 16 years old. He entered the University of Vienna, commuting by steamboat up the Danube, and completed his medical studies in 1863. His teachers included the anatomist Josef Hyrtl (1810–1894), pathologist Carl von Rokitansky (1804–1878), dermatologist Josef von Škoda (1805–1881), and surgeon Józef Dietl (1804–1878). During his studies, Kassowitz earned his living as a stenographer in the Parliament under Anton von Schmerling (1805–1893).

For the following six years, Kassowitz worked as attending physician in various departments of the Vienna General Hospital. In 1869 he joined the Vienna Public Children's Institute, headed by Leopold Maximilian Politzer (1814–1888). Twelve years later, upon Politzer's retirement, Kassowitz became director of that hospital. Under his leadership, the Institute was expanded into a polyclinic to include departments of internal medicine, surgery, dermatology, neurology, otorhinolaryngology, and ophthalmology, all staffed by young volunteer, unpaid physicians. The number of children visiting the hospital tripled, from 6,000 in 1886 to almost 18,000 by 1900.

The Department of Neurology was entrusted by Kassowitz to the young neurologist Sigmund Freud (1856–1939), who had just returned from his training in La Salpêtrière, Paris, under Jean-Martin Charcot (1825–1893). Freud worked at the Institute as consulting physician on two or three mornings a week through 1897. In that period, Freud published a series of important works on pediatric neurology, including 'On hemianopsia in early childhood' (1890), 'A clinical study on cerebral hemiplegia of children' (1891) coauthored with the pediatrician Oscar Rie (1863–1931), 'An account of the cerebral diplegias of childhood in connection with Little disease' (1893), 'On familial forms of cerebral diplegias' (1893), and the pediatric neurology classic, 'Infantile cerebral paralysis' (1897) [4]. In 1896 Freud was succeeded in his post by Emil Redlich (1866–1930). The Institute was disbanded in 1938, when Austria was annexed by the Third Reich.

In 1886 Kassowitz was appointed *Privatdocent* and in 1891 Associate Professor (Extraordinarius) of Pediatrics at the University of Vienna.

The scientific output of Kassowitz, between 1874 and 1914, comprises some 250 articles and a dozen monographs, virtually all single-authored [5, 11]. In 1890 he founded and edited a journal, *Beiträge zur Kinderheilkunde aus dem I. Öffentlichen Kinder-Krankeninstitute in Wien* ('Contributions to Pediatrics from the First Public Hospital for Children in Vienna).

Kassowitz wrote 75 papers on osteogenesis and rickets, syphilis, diphtheria and other infectious diseases, and serum immunization; 15 papers on dentition, tetanus, infantile myxedema, Down syndrome, and micromelia; 40 papers on alcohol and its abuse; 30 papers on general science, biology, and philosophy, covering topics such as vitalism and teleology, the crisis of Darwinism, free will and morality, and consciousness; and 12 papers on diverse popular themes for lay audiences.

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In 1883 Kassowitz introduced a method for treating rickets with phosphorus dissolved cod liver oil (rich in vitamin D), first in rabbits and then in children. He histologically examined reckets specimens in the Department of Pathology headed by Salomon Stricker (1834–1898) and described the inflammatory lesions of bones.

His monographs in pediatrics include 'Congenital syphilis' [6], 'Metabolism and immunity' [8], and '36 Lectures in Practical Pediatrics for Students and Physicians' [10]. Based on clinical observations, Kassowitz concluded that the transmission of syphilis to a fetus largely depends on the duration of the disease in the mother; according to the 'Kassowitz law', the longer the interval between infection and pregnancy, the more benign is the outcome in the infant [3].

The three-part 'Normal Osteogenesis and Diseases of the Bone System in Rickets and Congenital Syphilis' (Wilhelm Braumüller, Vienna, 1881, 1882, 1885), with 626 pages and 17 color plates, is considered a classic of pediatrics. His 'Lectures on the Diseases of Children during the Period of Dentition' (1882) were translated into Italian by Filippo Pagliari, Professor and Director of the Brefotrofio Provinciale di Roma, under the title *Lezioni sulle Malattie dei Bambini durante il Periodo della Dentizione* (Riforma Medica, Napoli, 1893).

In the last two decades of his life, Kassowitz became concerned with biological and philosophical problems. He authored a four-volume 'General Biology' [7] of nearly 1800 pages that covered (I) the formation and breakdown of the protoplasm; (II) heredity and development; (III) metabolism and energy exchange in the animal organism; and (IV) nerves and psyche. This was followed by the book 'World-Life-Psyche' [9], based on a series of popular science lectures on natural philosophy, intended for the general public (Fig. 2).

Kassowitz was a life member of the German Society for Children's Diseases and of the Russian Society for Children's Diseases in St. Petersburg. On the occasion of his 70th birthday in 1912, 30 physicians from Vienna, Budapest, Prague, Berlin, Düesseldorf and Basel compiled, under the auspices of the Pediatric Society of Vienna, a *Festschrift* to honor their mentor and colleague [5]. One of the chapters was contributed by Kassowitz's eldest son, Karl Kassowitz (1886–1978), at the time volunteer assistant in the Kaiserin-Auguste-Victoria-Haus to fight infant mortality.

Max Kassowiz retired from practice in 1906. He died of pneumonia in Vienna on 22 June 1913, a year before the onset of World War I. His cremains were interred at Döblinger Cemetery. In the announcement of his passing, *The Lancet* noted, "…he showed remarkable critical and diagnostic ability, so that he was appointed extraordinary professor when he had only been six years qualified…he wrote many valuable works and papers, not only on rickets, on which subject he was a great authority, but also on general biology, metabolism, and immunity" [1].

Kassowitz married Emilie, née Rosenthal (1854–1938) in 1876. The couple first met ten years earlier, when the young medical intern was called to treat her for cervical lymphadenitis [12]. The couple lived for 33 years at Steindlgasse 2, in a narrow lane in the building that housed the Children's Institute. Their three daughters, Julie, Anna and Antonie, and two sons, Karl and Ernst, were born and grew up there. Emelie belonged to a musical family. In 1903 she became a founding member of the 'Society of Abstinent Women', of which she also served as Vice President. Max and Emelie Kassowitz received numerous honors, including a Golden Cross of Merit, and became actively engaged in the Anti-Alcohol Movement. In a lecture before the Vienna Physiological Club in November 1898, Max Kassowitz claimed: "If I have helped to bring about the downfall of the dogma of the nourishing and invigorating properties of alcohol, which I must consider one of the most ill-fated errors of science, then I would see in it a sufficient reward for my efforts" [11].

Kassowitz's collected papers were posthumously published in a single volume [11], including a complete bibliography, at the initiative of his eldest daughter, the philosopher Julie Kassowitz-Schall (1882–1924).

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Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of interest

The authors declare that they have no conflict of interest.

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Captions for Figures

Figure 1 Max Kassowitz (1842–1913), Professor Extraordinarius of Pediatrics, University of Vienna. From a period postcard (author's archive). Copying, redistribution or retransmission without the authors' express written permission is prohibited.

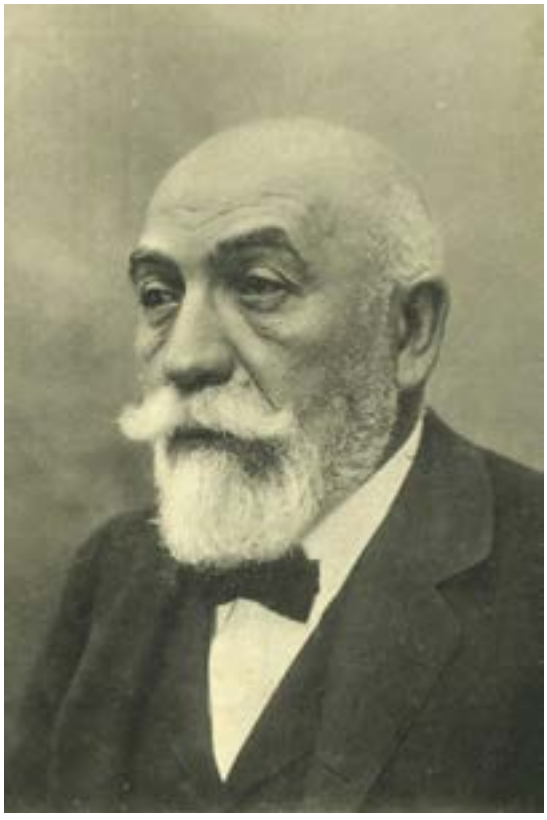

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Figure 2 Title pages of the monographs Nerves and Soul [7] (fourth volume of 'General Biology', 1906) and World–Life–Soul [9] (A System of Natural Philosophy in a More Comprehensive Presentation, 1908) by Max Kassowitz (author's archive). Copying, redistribution or retransmission without the authors' express written permission is prohibited.