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Edward Flatau (1868–1932)

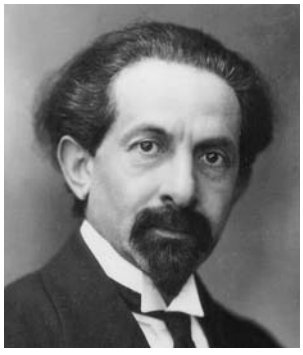

Fig. 1 Dr. Edward Flatau

Edward Flatau is the founder of Polish neurology. He was born in Płock, Poland on December 27, 1868 (a month after Brodmann). He graduated from the gymnasium in 1886 with a gold medal [10] and from Moscow University Medical Faculty in 1892 *cum eximia laude* [8]; Kozhevnikow and Korsakov were his neurology and psychiatry professors. A year later Flatau moved to Berlin, where he would work until 1899 on neuroanatomy, neurohistology and neuropathology under Waldeyer, Gad, Mendel, Goldscheider, Jacobsohn, von Leyden, Remak and Leppmann.

At the age of 26, Flatau published an 'Atlas of the human brain and the course of nerve fibres' (Karger, Berlin, 1894), based on long-exposure photographs of fresh brain sections (up to 10 minutes for flat and 30 minutes for uneven surfaces, by means of small diaphragms). The Atlas was published in German, English, Russian, French and Polish. In a review, Sigmund Freud – then 38 years old and a neurologist – wrote: "The plates with their clarity deserve to be called excellent educational material, suitable as an utterly reliable reference. A schematic plate in the beginning gives an overview of our knowledge on the fibre pathways in the CNS, incorporating the accounts of Mendel, Bechterew and Edinger and continuing with the differing views on the structure of nervous tissue of Golgi and Ramón [y Cajal]. The price of the work is minimal if one considers its completeness and beauty. The author and publisher deserve thanks from the medical community for this valuable work" [6].

Flatau was a fervent champion of neuronism. In the first paragraph of his 1894 Atlas, he writes: "A nerve cell, with its nerve fibre process and terminal branches, forms *a nerve unit or 'neuron' of Waldeyer*. The nervous system is made up of an immense number of those independent units, communicating with and influencing one another by contact." He supported the unity of neurons by cutting the oculomotor nerve and detecting secondary changes in the oculomotor nucleus with the Nissl method, and used the Golgi and Marchi methods to study secondary degeneration after limb amputation in dogs, rabbits and rodents.

Between 1893–1896 Flatau and Gad criticized the Bastian-Bruns law on areflexia after transverse sectioning of the spinal cord. During 1897–1898 Flatau studied neuronal pathology after mechanical, thermal and toxic insults [7]. He provided evidence for the laminar arrangement of spinal pathways: 'Flatau's law' states that longer spinal tracts have a more eccentric position [1]. He also described the fifth, seventh and eighth cranial nerves, and carefully outlined their nuclei.

Flatau served as editor-in-chief of *Jahresbericht für Neurologie und Psychiatrie* from 1897–1916.

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In 1899 he wrote the anatomy part for the chapter on neuritis and polyneuritis in Nothnagel's *Specielle Pathologie und Therapie*. Flatau and Jacobsohn co-authored a 'Handbook of comparative neuroanatomy of the mammalian CNS' (Karger, Berlin, 1899) and, with Lazar Minor, a textbook of neuropathology [3].

After refusing a neurology chair in Buenos Aires [9], Flatau returned from Berlin to Warsaw in 1899 [10]. At the Internal Medicine Clinic of Teodor Dunin and Władysław Janowski in Dz. Jezus Hospital, Flatau worked as a consulting neurologist [8]. In 1904 he was appointed head of a 20-bed neurology clinic at Warsaw's Starozakonnych na Czystem Hospital. He put together a microscopy laboratory in his apartment (Dabrowskiego 2), which he moved to the Warsaw Scientific Society (Śniadeckich 8) in 1913, founding the Marcelego Nenckiego Neurobiological Institute.

Flatau studied epidemic encephalomyelitides and meningitides, multiple sclerosis [4], baseocranial tuberculosis [2], and tumours of the nervous system [5]. With Józef Handelsman he used the serum of animals infected with pneumococcal meningitis to counteract the inflammation. He described the neck-pupillary reflex in diverse forms of meningitis and an erection sign in tuberculous meningitis upon passive body flexion. He treated meningitis with x-rays and hypertonic fluids and studied the blood-brain barrier [8, 9] with the Fuchsin chromo-neuroscopic reaction [10].

Shortly after Emil Redlich in Vienna, Flatau described in detail the clinical spectrum of epidemic disseminated encephalomyelitis (Redlich-Flatau disease). With Władysław Sterling he described one of the first cases of dystonia musculorum deformans or familial torsion spasm in children (Ziehen-Oppenheim or Flatau-Sterling syndrome). In 1912, he published a classic monograph on migraine, on the basis of 500 cases, in the Neurology-Psychiatry series edited by Alzheimer and Lewandowsky (Springer, Berlin); he described ophthalmic, epileptic, psychic and facial paretic forms.

In his 1919 'Experimental studies on malignant tumours of the nervous system' he emphasized the value of radiotherapy; by transplanting malignant tumours into the nervous system of albino mice, he studied the clinical outcome of treatments by chemical and physical means. In 1923 he published the monograph 'Extrapyramidal symptom complexes' in Polish, with material from the 1919 epidemic of encephalitis lethargica in Poland. In 1925 he described encephaloleucopathia scleroticans progressiva or encephalitis periaxialis diffusa (Schilder or Flatau-Schilder disease).

Flatau helped establish a Neurological Society from the Warsaw Medical Association and a clinical section at the Society for Public Medicine, and secured a new building for the Pathology Institute. He promoted neurosurgery as a new discipline, and founded the 'Warsaw Medical Journal', 'Polish Neurology' and 'Czystem Hospital Clinical Quarterly'.

In 1929 his students issued 'Księga jubileuszowa Edwarda Flataua' (Gebethner & Wolff, Warszawa), a volume to celebrate his 35 years of scientific activity. A strong, warm, untiring and humble personality, Flatau died of a brain tumour – which he had kept secret until his movements became restricted – on June 7, 1932 in Warsaw.

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