Bernhard Pollack (1865–1928)

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Received: 12 March 2010 / Accepted: 30 March 2010 / Published online: 15 April 2010
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Bernhard Pollack wrote the first standard reference on histological staining methods for the nervous system [7]. He worked at Berlin's First Anatomical Institute, headed by Wilhelm Waldeyer [6], the Neuropsychiatric Institute of Emanuel Mendel [1], the Institute for Infectious Diseases directed by the later Nobel laureate Robert Koch [3], and at the research laboratory of the Eye Clinic with Paul Silex [4, 8, 10]. He collaborated with Max Bielschowsky [1] and Edward Flatau [9], who called Pollack "the man with the great work on the nervous system".

Born into a Prussian-Jewish family, Pollack was the youngest of five children [5]. He became fluent in German, French, Italian, English, Polish, Latin and Greek. His father Jakob was a tradesman who amassed a commanding fortune by being a supplier to the Prussian Army during the Austro-Prussian War of 1866; his mother's family (Ledermann) came from Silesia (Fig. 1).

Pollack became an *approbierter Arzt* (assistant physician) and completed his doctoral thesis in pathology (on metastatic lung tumors) in April 1893 at the Faculty of Medicine of Leipzig University, a leading institute at the time. Pollack's teachers were Waldeyer and Carl Weigert [7]. Cancer pathology had been a research interest of Waldeyer and his student Weigert during their early years in Breslau, prior to their seminal work on the nervous system.

Pollack joined the Berlin Medical Society in 1896 and practised in Silex's Polyclinic as an *Oberarzt* (attending physician), attaining the reputation of a distinguished ophthalmologist. He attended the 15th Internal Medicine

Fig. 1 Bernhard Pollack (1901). Credit: http://de.wikipedia.org/wiki/Siegfried_Kalischer; original at Akademie der Künste, Berlin [2]. Signature from a dedication copy of Flatau's 1894/1899 *Atlas of the Human Brain* (author's archive)

Congress (Berlin, June 1897), 12th International Internal Medicine Congress (Moscow, August 1897) [2], and 10th International Ophthalmology Congress (Lucerne, September 1904). Between 1899 and 1909, he reported cases to the Berlin Ophthalmological Society (ocular filariasis, metastatic choroidal carcinoma, spindle cell sarcoma of the

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frontal sinus, and Mikulicz disease or Sjögren syndrome), also compiling the Society's proceedings for the *Zeitschrift für Augenheilkunde*, in addition to the proceedings of the Berlin Physiological, Medical and Psychiatric-Neurological Societies.

Pollack published his compendium of staining methods for nerve tissue in 1897; it was dedicated to Waldeyer and Weigert. By 1905, the book had gone through three German editions and English, French, Russian and Italian translations. Specific instructions and a comprehensive bibliography covered most neurohistological stains known at the time. The chapters described dissection of the central and peripheral nervous system, macroscopic examination and conservation for museum purposes, hardening, embedding and sectioning, changes in brain weight depending on fixative, micrography, macro- and microphotography, stains for neurons, fibres and glia, and practical suggestions on choice of technique for normal or pathological neurohistology. He also discussed changes in brain weight according to gender, age, and hemispheric dominance. The methods of Ehrlich, Nissl, Weigert, Golgi, Cajal, Marchi, Flechsig, Freud, Nansen, Lenhossék, Frey, Roncoroni and Azoulay were described, as well as those of others; a separate chapter covered the retina, with reference to Cajal and Dogiel.

The book received favourable reviews from Theodor Ziehen and Alfred Walter Campbell, who called the author "a thoughtful, accomplished, and well-practised microscopist", highlighting the minute commentaries on each staining procedure and the distinction between important and unimportant methods. Its practical merits were thoroughly recommended by the *British Medical Journal*.

Pollack further wrote papers on neuroglia and its stains [6], the innervation of the mammalian eye [1], nerve cell damage from botulinum toxin [3], a primary tumour (suspected neurofibroma or myxosarcoma) of the optic disc [4], metachromasia of the sclera in tuberculous panophthalmitis [8], and optic nerve damage with mental signs following skull fracture [10]. His last publication, on the histology of an optic nerve gliosarcoma, appeared posthumously in the *Festschrift* for Flatau [9].

Pollack served on the editorial boards of *Jahresbericht über Neurologie und Psychiatrie* and *Centralblatt für Praktische Augenheilkunde*, reviewing literature on staining and anatomical methods in neurological research. Having been appointed Professor of Ophthalmology at the

Friedrich-Wilhelms-Universität in 1919, his renown extended beyond continental Europe. Bernhard Pollack died in 1928 at the age of 63. He was twice married and is not known to have had children. His residence at Blumes Hof 15 would be expropriated in 1939–1941 by the Nazi regime as Jewish property, while his sister Betty Friedmann and her daughter would fall victim at Auschwitz.

Besides an acknowledged scientist and medical scholar, Pollack was a fine pianist, pupil of the composer Moritz Moszkowski. At the age of 25, Pollack had published a four-hand piano transcription of his master's *Second Suite for Orchestra*, op. 47 (Hainauer, 1890). He performed with the Austrian composer Fritz Kreisler in America and with the Hungarian violinist Joseph Szigeti in Berlin. Pollack's brother Joseph, who died young in a railway accident, was also musically gifted, having being accepted for a piano audition by Franz Liszt [5]. In 1911 Pollack founded the *Berliner Ärzte-Orchester*, an ensemble of musically talented physicians. Now, a century later, the orchestra is still active, performing a wide repertoire of symphonic works.

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