Forgotten Poles in the history of neurology: from Flatau to Frey

Polacos olvidados en la historia de la neurología: de Flatau a Frey

Mateusz Gotowiec1

1 Medical University of Warsaw, Faculty of Medicine, Warsaw, Poland. Address for correspondence Mateusz Gotowiec (email: s082446@student.wum.edu.pl).

Difficulties of Polish Neurology over the Centuries

The 19th century marks the rise of scientific medicine, including the study of the brain.1 Neurological studies such as the description of Shaking Palsy by James Parkinson, in 1817, or the introduction of the term neuroglia by Rudolf Virchow, in 1859, are examples of developments that occurred over this important period.2 Not only Western researchers were responsible for the changes, but nowadays they constitute the most remembered group, specifically when looking at the occurrence of eponyms in the Anglo-Saxon medical setting. During this breakthrough, Poland was partitioned between three superpowers (the German, the Austro-Hungary, and the Russian empires) until 1918, and then occupied during the war period of 1939 to 1945.3 These
difficulties did not favor the expansion of modern medicine; however, they were not able to impede Polish neurologists from developing new treatments (►Figure 1). On the other hand, their developments were not followed by international recognition as in many cases annexationists did not allow Polish discoveries to be fully acknowledged. Nowadays, this lack of remembrance is visible when comparing eponymic names commonly found only in Polish medical literature that are not followed by recognition in international databases (►Table 1). This article focuses on bringing back the memory of three forgotten Polish neurologists whose stories and lives intertwined throughout the years.

EDWARD FLATAU – FOUNDER OF POLISH NEUROLOGY

In 1894, 2 years after graduating from the University of Moscow with cum eximia lauda distinction, young Edward Flatau published Atlas des menschlichen Gehirns und des Faserverlaufes (Atlas of the human brain and the course of the nerve fibers). This extraordinary work, described by Sigmund Freud as "excellent educational material," was translated into English, Russian, and French shortly after its publication. The atlas became the entry into the world of science for 26-year-old Flatau. Three years later, at the Royal

![Timeline comparing international and Polish developments in neurology.](image)

**Table 1** Comparison between Polish neurological eponyms with those in Anglo-Saxon sources

<table>
<thead>
<tr>
<th>Polish eponym</th>
<th>Anglo-Saxon name</th>
<th>Description</th>
<th>ICD-11/SNOMED CT</th>
<th>Medical dictionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piltz sign</td>
<td>Eye-closure pupil reaction</td>
<td>Constriction of both pupils when trying to close eyelids that are forcibly held apart</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Fajersztajn-Krzemicki sign</td>
<td>Fajersztajn test</td>
<td>Derivative of Lasègue’s sign, occurring as pain in affected limb when testing the healthy one</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Brudziński’s sign</td>
<td>Brudzinski’s cheek sign</td>
<td>Meningitis determinant based on pressure on check eliciting reflex action that results in twitching of periorbital area and upper lip</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Orzechowski sign</td>
<td>Orzechowski syndrome</td>
<td>One of encephalitis signs, nonvoluntary eye oscillations</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Mackiewicz sign</td>
<td>Femoral nerve stretch test</td>
<td>Characteristic sign of sciatica, when in prone-lying patient flexion at knee joint results in pain of anterior compartment of thigh</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Piotrowski sign</td>
<td>Piotrowski sign</td>
<td>Characteristic sign of pyramidal tract lesion, when tapping of tibialis anterior muscle results in plantar flexion of ankle and toes</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Flatau syndrome</td>
<td>Torsion dystonia</td>
<td>Genetic disease characterized by painful muscle contractions</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Frey’s syndrome</td>
<td>Frey’s syndrome</td>
<td>Disorder resulting from damage of parotid gland and auriculotemporal nerve that results in sweating and erythema in response to gustatory stimuli</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Progulski sign</td>
<td>Early meningeal symptom</td>
<td>Lack of smile used to determine early meningitis in children</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Herman’s sign</td>
<td>Nuchohalux sign</td>
<td>Meningal sign occurring when passively pulling patient’s head toward chest results in dorsiflexion of first toe</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Notes: ✓, present; ✗, not present; *, only in SNOMED. To determine, whether the eponyms, developed by original scientists, are not only used in Polish medical setting but also in dominating Anglo-Saxon medicine, the gathered list was compared with the ICD-11/SNOMED CT and the Free Medical Dictionary.
Academy, in Berlin, he showed evidence of the laminar arrangement of spinal pathways stating that “longer spinal tracts have a more eccentric position,” later known as Flatau Law.\(^5\) His respect for patriotism can be seen in his rejection of the position of chair of neurology in Buenos Aires, in 1899, following which he returned to Warsaw in his home region.\(^5\)

After an intensive course on neurohistology with Alois Alzheimer and Franz Nissl, in Munich, during which he modified and improved Golgi’s method of staining, in 1906, he permanently returned to Warsaw, where he stayed for the next 25 years.\(^6\) During this period, he worked in The Jewish Hospital as head of the department of neurology where, due to his respected position in Russian authority, he developed the most innovative neurological ward in occupied Poland.\(^7\) Under his governance as head of the department of neurobiology of the Warsaw Scientific Society, he established new neurological laboratories to train doctors.\(^6\)

He died in 1932, followed 5 months later by Samuel Goldflam, his friend and another important Polish neurologist.\(^4\)

Both, through the organization of Polish scientific societies, created space for future scientists to study the brain.

**STANISLAW PROGULSKI – ONE OF MANY VICTIMS**

One of the neurologists who followed Flatau’s path through Berlin Charité hospital was 6 years younger Stanislaw Progulski, a student of the University of Lwów (currently Lviv, Ukraine) who later developed the Leopolitan School of Thought and profoundly influenced the study of neuroimmunology in children.\(^8\)–\(^10\) Similarly to Flatau, he was of Jewish descent yet also perceived himself as Polish, fighting against Bolshevik forces in Lviv in 1918 as an officer of the Polish Army.\(^8\)

After the First World War, he worked as a lecturer at the pediatric clinic where he stayed until 1938. During this period, focusing on the study of bacterial meningitis, he described an early sign of meningitis, that is, lack of hidrosis in the facial region when eating proved to be the first inquisitive study of autonomic innervation of the face.\(^15\)

German forces entered Lviv. At midnight, a group of Einsatzkommando (secret police) soldiers arrested him, along with other distinguished Leopolitan scientists to “clear the region from particularly dangerous individuals.” He was shot dead the very next day, in what is currently known as Student’s Park, not more than two kilometres from his house.\(^8\)

**NOT ONLY MEN – THE STORY OF ŁUCJA FREY-GOTTESMAN**

Germans, soon after entering Lviv, in 1941, instituted the Ghetto Lemberg, dividing the Jewish population into useful and useless\(^11\). At first, being a physician, Lucja Frey earned a place in the prime group and worked to ease the suffering of already war-torn people in the II Ghettopoliklinik.\(^12\) The last sign of her life comes from April 1942–permission to work No. 144, commonly known as a green card. Unfortunately, similarly to Progulski and other Polish Jews, she did not survive Shoah. However, her dedication as one of the first Polish female neurologists and academic achievements allowed the memories of her to live on. Her story begins in 1889 in Lviv, where she was born and in 1917 began her medical studies. After 2 years, she moved to Warsaw, completing her education with the highest degree in neurology – her further main interest. Soon after, in 1923 she published her first paper on the auriculotemporal syndrome in the Polish Medical Journal followed by the French Revue Neurologique.\(^13\),\(^14\) Her case report of a 25-year-old-patient with auriculotemporal nerve injury caused by bullet and hypertension in the facial region when eating proved to be the first such inquisitive study of autonomic innervation of the face.\(^15\)
Gustatory sweating, caused by erroneous regrowth of parasympathetic fibers into sympathetic receptors, as she proposed, was one of the symptoms of disease, later known as Frey syndrome.16,17 Her perspicacity as one of the first Polish female neurologists shows a pathway that should still be followed.

In conclusion, the presented personalities (►Figure 2) show that modern neurology, although perceived mainly as developed by Western scientists, was not their sole creation. The influence of Polish neurologists and their commitment should never be forgotten and deserves remembrance.

Conflict of Interest
The author has no conflict of interests to declare.

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