

ORIGINAL PAPER

**ANATOMOPATHOLOGICAL RESEARCH IN NINETEENTH-CENTURY
GDANSK – AN OUTLINE OF THE PROBLEM**ADAM SZARSZEWSKI¹, PIOTR PALUCHOWSKI¹, JACEK GULCZYŃSKI²¹Department of History and Philosophy of Medical Science, Medical University of Gdansk, Gdansk, Poland²Department of Pathology and Neuropathology, Medical University of Gdansk, Gdansk, Poland

Between 1793 and 1914, there were many internationally recognised physicians active in Gdansk. Their scientific activities included, among other things, anatomopathological research, constituting a determinant of progress in medical sciences during this period. One of the most important people was Martin Heinrich Rathke (1793-1860). He is recognised as one of the founders of modern embryology. In Gdansk Rathke's successor was Wilhelm Baum (1799-1883). Baum introduced compulsory post-mortem examinations in the city hospital even after the outbreak, and he was mentor to Theodor Billroth (1829-1894). The successor of Baum as the head of the city hospital was Emil Friedrich Götz (1806-1858). He took up an important topic, which was the consent of the family of the deceased to perform an autopsy. Furthermore, it described the gradual broadening of the scope of anatomopathological activities, consistent with the postulates of the first and second Viennese school, performed in Gdansk in the nineteenth century. However, a detailed analysis of the relationship between the discoveries of nineteenth-century medicine, especially in the field of pathological anatomy, and research carried out in Gdansk, remains in the sphere of research to be done.

Key words: Gdansk, history, anatomopathological research, nineteenth century.

The period in the history of Gdansk between the second partition of the Commonwealth (1793) and the outbreak of the First World War (1914) is still characterised by a great deal of research potential in the field of medical history. After the Second World War, the neglect of many scientific areas was influenced by the focus of researchers on the "Polish element", hardly perceptible in nineteenth-century Gdansk. In reality, however, between 1793 and 1914, there were many internationally recognised physicians active in this city. To this day, they are unjustly forgotten, remaining apparently on the outskirts of both German and Polish research. Their scientific activities included, among other things, anatomopathological research, constituting a determinant of progress in medical sciences during this period.

From the sixteenth century, Gdansk, as one of the largest cities in this part of Europe, promoted medical research, including anatomical and pathological research. The institutional basis became the Gdansk Gymnasium, established in 1558 (from 1580 Gdansk Academic Gymnasium), especially its Department of Anatomy and Medicine [1, 2] formed in 1580. Probably the first Gdansk physician to carry out autopsies was Joachim Oelhaf (1570-1630). It is known from sources that he had autopsied a child with liver pathology and performed a forensic examination of the philosopher Bartholomaeus Keckermann (1572-1609) [3, 4, 5: 40-44]. However, today he is remembered mainly because of the first public section of a child in this part of Europe. The child had a malformation syndrome, and the autopsy took place at

the end of February 1613. Soon, on his initiative, there was also a public section of a man's head [6, 7, 8]. Later, one of Oelhaf's successors, Laurentius Eichstadius (Lorenz Eichstädt, 1596-1660), conducted anatomopathological research, including at least three public autopsies. This scholar indicated a great need for practical teaching of the construction of the human body, not only of physicians, but also surgeons and midwives [5: 62-66]. However, the greatest achievement of Gdansk anatomy of the modern period was arguably the human body atlas ("Anatomische Tabellen") produced by Johann Adam Kulmus (1689-1745), released for the first time in 1722 and later repeatedly reissued [5: 129-134; 9, 10, 11].

In the eighteenth century, anatomopathological examinations were not carried out very often, despite the postulates of the so-called "Older Vienna Medical School", which tried to create a coherent system of care for the sick that could serve both for the correct diagnostic and therapeutic process and for conducting scientific research. The culmination of treatment in a hospital setting, in the case of therapeutic failure, was to be a post-mortem examination. Thanks to this procedure, it was possible to associate the changes observed intravitaly with the anatomopathological changes exhibited after death. Only from the beginning of the nineteenth century did such a method of conduct become common. The so-called "Second Viennese Medical School" also introduced mandatory detailed histopathological examinations.

These changes in European medicine can also be traced in Gdansk. In the second half of the eighteenth century, in the largest hospital, Lazaret, full autopsies of the patients' bodies required the consent of the mayor [12] each time. On the other hand, at the same time, the municipal authorities issued a regulation requiring the education of midwives based on post-mortem examinations of women who died during childbirth [13]. However, soon there were significant changes made in the hospital, related to political changes – in 1793 Gdansk became a part of Prussia. The new authorities, as part of social reforms, in 1802, made Lazaret into a new type of hospital. The poor were relegated from there; the institution became solely for the treatment of the sick. Lazaret gained the status of a city hospital. After the dramatic impoverishment of the city during the Napoleonic wars, in 1812 the Gdansk academic Gymnasium stopped teaching medicine, and was later transformed into a secondary school. The town was deprived of an academic centre until 1904 (Königliche Technische Hochschule zu Danzig was established then). However, anatomopathological studies have not been halted, and moreover, due to numerous discoveries in this field, they began to be carried out more systematically as part of the city hospital's activities.



Fig. 1. Martin Heinrich Rathke (From *Muzeum Gdańska*, sign. 18055)

One of the most important people associated with this institution was Martin Heinrich Rathke (1793-1860; Fig. 1).

This eminent researcher was born in Gdansk exactly one month (August 25, 1793) before the treaty was signed between the Commonwealth and the Kingdom of Prussia (September 25, 1793) incorporating, inter alia, the city into Frederick William II's state [5: 191-194; 14, 15, 16, 17, 18, 19, 20]. Rathke studied medicine at the University of Göttingen, and later in Berlin. Even then he was interested in comparative anatomy of humans and animals. Therefore, the PhD thesis he defended in 1818 concerned the genital organs of the salamander. When Rathke returned to his hometown, he began to practice medicine and also became a physics and geography teacher in a secondary school. In 1822, he published a short text about body defects in animals and people [21], and a year later an article on congenital defects in human eyes [22]. These were the results of his dissectional studies at the city hospital.

Despite numerous administrative and medical duties, he continued his anatomical research, mainly on animals. He became interested in the anatomical structure of fish, in which he discovered pharyngeal arches and grooves. In 1828, his text appeared in the second volume of Karl Friedrich Burdach's (1776-1847) *Die Physiologie als Erfahrungswissenschaft* (Physiology as empirical knowledge) discussing

their existence in human embryos [23]. Soon, however, Rathke left Gdansk, and in March 1829 he became Professor of Physiology and General Pathology in Dorpat (now Tartu) [15]. There he finished the work he had started in Gdansk, entitled *Abhandlungen zur Bildungs- und Entwicklungs-Geschichte der Menschen und der Thiere* (Scientific dissertations on the history of formation and development of humans and animals), in which he compared the structure of man and animals [24]. From 1835 he worked in Königsberg (now Kalliningrad), where he worked on the issue of the embryonic structural element from which the pituitary gland was formed. He described it in a text published in 1838, and later it was called Rathke's pouch [19, 25]. He died in 1860.

Another important Gdansk physician was Wilhelm Baum (1799-1883), born in Elbląg, but for many years associated with Gdansk [5: 219-223; 26, 27, 28, 29: 186] (Fig. 2).

He studied medicine in Königsberg, Göttingen, and Berlin, where in 1822 he defended his doctoral thesis. Eight years later he moved to Gdansk, because his brothers succeeded in persuading the city authorities to grant him the position of the head of the hospital. He took the post in 1830 and immediately had to deal with a huge problem: an outbreak of cholera – the first of several that hit the city in the nineteenth century. Baum's main goal was to treat people suffering from cholera, but also to learn about this condition, which was supposed to lead to the development of more effective methods of stopping the disease. That is why he was doing autopsies of patients who died of cholera at that time, despite being fully aware that he was putting his own life at risk.

Importantly, Baum introduced compulsory post-mortem examinations in the city hospital even after the outbreak. They also included histopathology, and all results were recorded. According to Eduard Otto Dann's account, in 1832 a new autopsy room was created in the hospital, equipped thanks to a separate bequest [30]. Frequent post-mortem examinations caused a large number of anatomical specimens to be created at a rapid rate.

Baum was a very active physician. While serving the office of the head of the Gdansk hospital, he would go to Paris to learn new methods of surgical treatment of kidney stone disease. In Gdansk, together with Karl Theodor Ernst von Siebold (1804-1885), he studied the structure of nasal polyps. In 1842 he left Gdansk and moved to Greifswald, where he became a professor of surgery at the local university. In 1848, as the first German physician, he used tracheostomy to treat the croup. Baum is also known for being mentor to Theodor Billroth (1829-1894), one of the most famous German surgeons of the nineteenth century. He ended his scientific path at Göttingen, where he died in 1883.



Fig. 2. Wilhelm Baum (From PAN Biblioteka Gdańska, sign. 4716)

The successor of Baum as the head of the city hospital was Emil Friedrich Götz (1806-1858) [5: 186-190; 31, 32]. He studied medicine in Heidelberg and Halle and then worked for two years in a university clinic in the latter city. In 1833 he returned to Gdansk, where he was employed as a doctor for the poor. In 1842, he accepted the above-mentioned position of the head of the city hospital. As its administrator, he significantly improved the housing conditions. His scientific work, published in 1845, deserves distinction: *Statistisch-Medizinischer Bericht über des Stadt-Lazareth in Danzig in den Jahren 1843 and 1844* (Statistical and medical report regarding the city lazaret in Gdansk from 1843 and 1844). It provided a detailed description of cases in the Gdansk hospital [29: 64-66; 33]. He believed that these data may contribute to the development of medicine, because the non-university environment represented by the Gdansk city hospital was much more natural for the patients than the clinical, impersonal university hospitals. Referring to the achievements of the second Viennese school, he planned to write a history of diseases in Gdansk, which could be the beginning of a modern classification system of pathologies. However, this did not happen, most likely due to his other duties. Götz not only developed the Gdansk municipal

hospital in terms of administration, but was also an active scientist. Because of his research interests, he dealt with necropsies of people who died in the hospital. Thanks to them, he was able to diagnose diseases that were in his time unrecognisable intravitaly, such as: arachnoiditis, meningitis, myocarditis, pericarditis, as well as rupture of the ureter and bladder, and liver and lung abscesses [5: 189-190]. He also performed dissections on the victims of the cholera epidemic that struck Gdansk in 1848, but, not unlike Baum, he failed to discover the aetiology of the disease. In his discussions, Götz also took up an important topic, which was the consent of the family of the deceased to perform the autopsy. He recalled that during his term of office only two protests occurred, which effectively blocked post-mortem anatomopathological examination, despite, as he noted, multiple conversations with the deceased's relatives.

Götz was an extremely valued doctor, as shown by the municipal authorities offering him in 1849 the title of an honorary citizen of Gdansk. In addition, in 1853 he took the post of Professor of Pathology and Therapy at the University of Kiel. During this period of his life, however, he did not achieve significant successes because he was severely ill towards the end of his life. He died in 1858.

After Götz left Gdansk, Albrecht Wagner (1827-1871; Fig. 3), who had come from Berlin, became his successor as head of the hospital in 1853 [5: 199-203; 34].

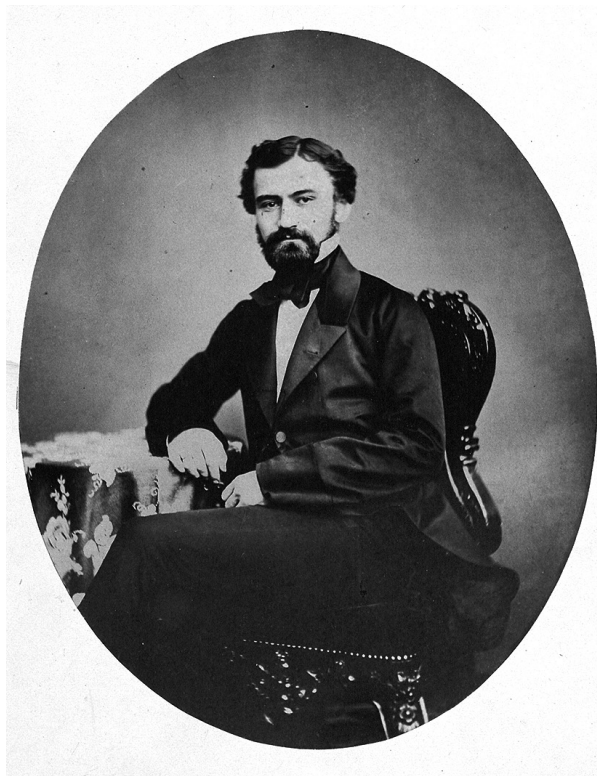


Fig. 3. Albrecht Wagner (From *PAN Biblioteka Gdańska*, sign. AL III/145/59)

Previously, he had contact with one of the most modern facilities of that type at that time, the Charité clinic. That is why he very quickly started to modernise the Gdansk hospital. At the beginning of his tenure, he issued an instruction regarding the duties of assistants. Among them was the obligation to perform post-mortem examinations. Each assistant performed autopsies of the deceased from his or her unit, unless the head of the department ordered otherwise. In the absence of the head physician, on his orders, the assistant wrote down the result of the section in the protocol. This document should have been submitted to the head physician for review by 4 p.m. on the day the dissection was carried out. The assistant appointed by the head was obliged to collect and store the important and rare changes found during the post-mortem examination in an appropriate manner. He or she also had to keep a journal of the collection and describe each specimen in it, marking when it was added. The bodies of people who died as a result of an accident or the fault of third parties were to be immediately closed after delivery to the morgue, and the dissection could only be started after receiving an appropriate court document. During the section, corpses could not be thoughtlessly maimed. It was also decided that the bodies of people who had paid for their treatment themselves should not be used for any further exercise apart from the autopsy itself. This record was due to the fact that often corpses were still used after the post-mortem examination, especially by surgeons to practice their surgical proficiency [29: 179, 401-409].

Wagner, being very critical about the medical situation in Gdansk, did not get the favour of the local authorities. Therefore, he willingly accepted the offer received from Königsberg, and there in 1858 he took over the chair of the department of surgery at the university and the position of director of a surgery clinic. During the Gdansk period, as well as from surgical issues, he was involved in the study of the relation between the occurrence of sugar in the urine and furunculosis, as well as the problem of rabies in humans. He died in 1871, during the Franco-Prussian war, as the chief doctor of the Prussian army.

Just before the First World War, an outstanding doctor of Jewish origin, Adolf Wallenberg (1862-1949; Fig. 4), practiced medicine in Gdansk [5: 292-296; 35-38].

He studied medicine at the universities of Heidelberg and Leipzig. From 1886 he practiced in Gdansk. Being well prepared for the medical profession and his aptitude for administration led him to assume the position of the head of the internal diseases department of the municipal hospital in 1907. Three years later he acquired the title of professor. In his research he focused primarily on neurology and neuroanatomy, although he worked as an internist.



Fig. 4. Adolf Wallenberg (From *PAN Biblioteka Gdańska*, sign. AL III/145/15)

Therefore, initially he devoted himself to scientific work in a laboratory located next to his home and only later used the hospital premises. He studied both animal and human material in his research, like other contemporary pathologists guided by the principles of comparative anatomy. He was particularly interested in the structure of the brainstem, the trigeminal ganglion, and the olfactory system, to which he devoted a lot of attention, because he tried to present its role in recognising food. In the history of medicine, he is known primarily as the discoverer of Wallenberg's syndrome. He accomplished this by combining clinical observations with detailed neuropathological studies. When the Nazis came to power in Gdansk, Wallenberg left the city and migrated to the United States, where he died in 1949.

Also worth discussing is the group of people dealing with pathological issues, who were only partially related to Gdansk. In this respect, one can mention Jean Georg Haffner (1775-1830), whose doctorate in Strasbourg concerned the pathology of pregnancy. His later professional career was connected with Gdansk [5: 162-167]. In Gdansk, August Hirsch (1817-1894) was born, who from 1863 was a pro-

fessor of pathology, history, and medicine at the Friedrich-Wilhelms-Universität in Berlin. Today he is known primarily as the author of a six-volume dictionary "Biographisches Lexikon der hervorragenden Aerzte aller Zeiten und Völker" (Biographical lexicon of prominent physicians of all times and nations), which to this day remains largely up-to-date [5: 229-232; 39].

The data presented in the article does not fully cover the issue, although it describes the gradual broadening of the scope of anatomopathological activities, consistent with the postulates of the first and second Viennese school, performed in Gdansk in the nineteenth century. However, a detailed analysis of the relationship between the discoveries of nineteenth-century medicine, especially in the field of pathological anatomy, and research carried out in Gdansk, remains in the sphere of research to be done. The obstacle is the significant depletion of sources during World War II and many years of marginalisation of the subject matter both by German and Polish historians of medicine. It seems, however, that the current opening of archives, together with the digitisation of their collections, should significantly facilitate research in this area.

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