

BOOK REVIEWS

Ernst Nauck (1819–1875): A Pioneer of Higher Technical Education in the Baltics

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The First Director of Riga Polytechnicum, Rīga:

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In 2012, one could see many students at Riga Technical University (RTU), the successor of Riga Polytechnic Institute, which had been founded in 1862, sporting a t-shirt with the portrait of Ernst Nauck on the occasion of the 150th anniversary of their university. Ernst Nauck was the first director of Riga Polytechnic. In 2019, commemorating the bicentenary of the birth of Ernst Nauck, the RTU print house published a 192-page scientific monograph *Ernst Nauck (1819–1875). The First Director of Riga Polytechnicum* by Professor Dr. Alida Zigmunde from the RTU Research Centre for Engineering History. Alida Zigmunde researches the history of the RTU, and has published many articles. The book was published in three languages—German, English, and Latvian—and includes 142 illustrations. The monograph is dedicated not only to the life of Ernst Nauck, but also sheds light on the history of the Nauck family, including some of its more famous members. At the same time, the first years of the operation of Riga Polytechnic are discussed—from its founding in 1862 to the 1870s, which is about the time when the first technical university in the Baltic area was headed by Ernst Nauck, professor of physics, chemistry and mineralogy.

Ernst Friedrich Nauck, as was his full name, was born on February 14, 1819 in the family of a pastor Carl Christian Nauck (1767–1830) and his wife Martha Frederike Wilhelmina Nauck, born Müller (1788–1842), in Auerstedt, Thuringia. He had seven siblings. His father died one day before his 11th birthday, but with subventions from a theologian he could continue his schooling. At the age of 13 and a half he transferred to the Dom Gymnasium at Naumburg-Saale, where his uncle was a teacher and vice director. Pedagogically, Ernst Nauck was a difficult case as he did not behave as was expected from him, so in 1834 he was dismissed from school due to inappropriate behaviour. He became a book

printer's apprentice and during his apprenticeship continued to study Latin and Greek as well as history and geography at home. An eye disease forced him to give up the apprenticeship. After his recovery in 1838, he visited the teachers' seminary in Erfurt and after successfully finishing it, in 1840, he started working as a teacher, first in Erfurt and later on in Suhl. In 1846, with a permission of the Minister of Culture of Prussia, he began studies at the Friedrich-Wilhelms-Universität in Berlin (today Humboldt University) without having to take an admissions exam. After passing the state exam in 1849, he received allowance to teach natural sciences in all the different types of gymnasia (high schools). At the same time, also in 1849, Nauck was awarded a doctoral degree in philosophy from the Faculty of Philosophy at the University of Halle-Saale.

In 1850, Ernst Nauck married Charlotte Wilhelmine Aurora Schmidt (1826–1880), with whom he had ten children. Ernst earned his living as a teacher in various educational institutions. In July 1851, Nauck moved to Krefeld and became a teacher at the newly-founded professional school. Not long after, he became its director, performing administrative and education tasks in his position. Under his leadership, the school grew in reputation and recognition. As the number of pupils was in a sharp rise, the need for a new school building became apparent. The new building was inaugurated in 1855. Besides his official duties as director, he pursued various other activities. Nauck conducted his own research and kept scientific contacts with researchers of his time. He held lectures at the behest of the *Rheinischer Landwirtschaftlicher Verein* (Rheinian Agronomic Association) on agronomic chemistry for teachers and economists. At his initiative, a school for weavers was founded in Krefeld, the centre of textile industry. Nauck was one of the founders and president of the *Naturforscherverein* (Association of Natural Scientists). He was a member of Freemasons. Together with local retailers, in 1853, he founded the masonic lodge *Johannisloge Eos Krefeld*. As a Freemason, he paid a “tax for the poor”, which was not a small sum, to help the poor and their families. Ernst Nauck was also one of the founders of volunteer firefighters.

Absolutely unexpected for the people of Krefeld and the authorities was his decision to leave Krefeld in 1862 and take up a post in Riga, which at that time was part of Russia. Riga Polytechnic School, which had just been founded, needed a director and there were four candidates for this post: Franz Reuleaux (1829–1905), Ferdinand Bothe (1827–1885), Ernst Walter Zehme (1822–1898), and Ernst Nauck (1819–1875). Reuleaux had studied machine building at the *Polytechnikum* in Karlsruhe (Karlsruhe Polytechnic) and became

professor at the *Eidgenössische Technische Hochschule Zürich* (Swiss Technical University Zürich). Bothe was physicist and director of a professional school in Saarbrücken. Zehme, who had studied mathematics, physics, chemistry, and mineralogy, was director of a professional school in Hagen. All the candidates had a doctorate degree and were known to be good pedagogues, administrators, and authors. In autumn 1861, the administrative board of Riga Polytechnic School made the decision to ask Nauck to come to Riga. In May 1862, the general governor of the Russian Baltic provinces, Baron Wilhelm Heinrich von Lieven (1799–1880), who at the same time was the curator of Riga Polytechnic School, accepted the decision of the administrative board. Nauck prepared himself meticulously. Even before he was officially named, he came to Riga, in early 1862, to prepare for the structuring of the school in different departments and tasks. Afterwards he returned to Krefeld for a few months to prepare his successor and took care to complete his list of necessary teachers in Riga. During Easter and summer vacations he visited foreign polytechnic schools, made acquaintances and acquired teaching material for use at Riga Polytechnic School. On September 15, 1862, Ernst Nauck arrived in Riga by train to take up his new position as director of the establishment. The property of the Nauck family as well as the instruments he had purchased for teaching mathematics and physics arrived by ship from the Lübeck harbour in Germany. On October 14, 1862, Riga Polytechnic School started to teach its students in German, which was adopted as the language of learning. The institution had eight departments (which were later called faculties): the departments of commerce, technical chemistry, mechanics, machine building, construction, engineering, surveying and agronomics, which were successfully activated. As director, Nauck was responsible for the organisational guidance of the institution. As a professor, he held courses in physics and chemistry. The first courses at the Polytechnic were preparation courses for the studies in natural sciences. While the students all arrived from classic gymnasiums with knowledge of Greek and Latin, they were not sufficiently prepared in the basics of mathematics and physics. So they all had to pass preparatory courses. These preparatory courses were offered until 1892 and in the meantime *Realgymnasia* had been formed, which prepared their pupils in mathematics and natural sciences so that they could follow courses on a polytechnic school like the one in Riga. In 1863, Nauck made another journey to Germany and Switzerland to acquire equipment and collections for his polytechnic school. In these moments, his personal connections with company owners proved very useful as, in many cases he only had to pay for the transport of these goods to Riga. Over time, Riga Polytechnic School became famous. Students came not only from the Baltic

provinces but from all over the Russian Empire. In 1865, the first German-Baltic students' association *Fraternitas Baltica* ("The Baltic Brotherhood") was founded. The second association of German-Baltic students, *Concordia* (later called *Concordia Rigensis*) followed in 1869. In 1862, Riga Polytechnic School started in rented rooms in the *Kaulschen Haus* ("House of Kaul"). In 1869, they moved into a newly erected building at the Thronfolger Boulevard no. 19, now Rainis Boulevard 19. As in Krefeld, Nauck not only worked in and for his institution but had also many activities outside of work. He was a member of the *Naturforscher Verein* (Association of Natural Scientists), *Technischer Verein* (Association for Applied Technologies), *Gewerbeverein* (Association of Production and Commerce), and *Verein der freiwilligen Feuerwehr* (Association of Volunteer Firefighters). He was also a member of the association against poverty and begging. There was an association called *Die Muse* (leisure), which organised cultural events, such as theatrical plays and operas, in which he occupied prominent positions.

Nauck died on January 26, 1875, in the middle of a game of chess with General Governor P. Bagration at the Riga Castle. He was the first director who was carried to his tomb from the steps of Riga Polytechnic School. He was laid to rest on February 3, 1875 on the Great Cemetery. Every year, on the day of the founding of Riga Polytechnic School, later Riga Polytechnic Institute and now Riga Technical University, representatives of the university lay flowers on the graves of Ernst Nauck and his successors.

In Riga, Ernst Nauck and his family had first lived on Elizabethen Street 40, later in the house no. 38, not far from the Wöhrmanns Park and Riga Polytechnic School. After Nauck's death, his wife Charlotte Wilhelmine Aurora had to take care of her children alone, five of whom were still under age. She was not very healthy and moved shortly after the death of her husband to Erfurt, Germany, where she died in 1880 at the age of only 54.

Like during Ernst Nauck's lifetime, the Nauck family has many members also in present day. Some of the members, such as the siblings of Ernst Nauck and their families, children and grandchildren, are introduced in this book with a short biography, some with a picture and documents. Among the members of the Nauck family there were many engineers, teachers, and pastors who lived and worked in Germany, in tsarist Russia and later, in the first half of the 20th century, in Latvia.

Such an extensive documentation of the life and work of Ernst Nauck and his family has never been undertaken and presented before. We hope it will be received by a wide readership. The fact that this monograph has been accepted for inclusion in the Web of Science speaks for its scientific quality.

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