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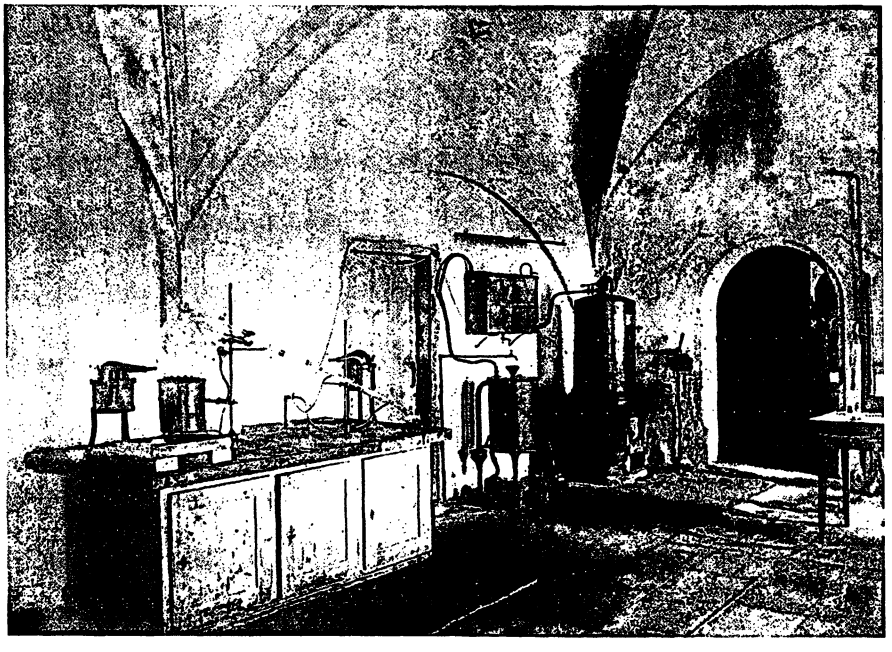
Editorial

Felix Hoppe-Seyler (1825–1895)
A Pioneer of Biochemistry and Molecular Biology

This month, we honour the 100th anniversary of the death of Felix Hoppe-Seyler. Ernst Felix Immanuel Hoppe, his name at birth, was born in Freyburg, a small town in central Germany, on December 26, 1825. He was orphaned early on and was taken in by the family of an elder sister. In 1864 he added their family name, Seyler, to his own in a gesture of gratitude and on the occasion of his official adoption.

In 1846, the year in which he completed his secondary education, he began his medical studies in Halle which he later continued in Leipzig and Berlin. His intense, and for that time, unusual interest in the physiochemical aspects of medicine, encouraged by meetings with many scientists during the course of his studies, was reflected in his doctoral dissertation on the chemical and histological aspects of cartilage structure. This interest may have contributed to the dissatisfaction he felt in the role of a practical physician, an occupation he began in Berlin in 1852. He applied for a position as a researcher at the University of Greifswald just two years later. After habilitating there in 1855, he accepted Rudolf Virchow's offer in 1856 to direct the chemical laboratories in the newly founded Pathological Institute of the Berlin Charité. Felix Hoppe-Seyler married Agnes Maria Borstein in Berlin in 1858. They later had two children. In 1860, he accepted a professorship at the University of Tübingen, a seat previously held by Julius Eugen Schloßberger, one of the most prominent German physiological chemists of the time. Much of Felix Hoppe-Seyler's most famous research was performed during this period in Tübingen up to 1871, including reports regarding the chemical and optical characteristics of haemoglobin. This work is discussed in the accompanying guest editorial written by Max Perutz (MRC Cambridge), whose ground-breaking studies on haemoglobin earned him the Nobel Price.

In 1872, Felix Hoppe-Seyler accepted a professorship at the University of Strasbourg which, as a consequence of the Franco-German War of 1870/71, was within German borders. He was appointed rector of the University just one year later. From the very beginning of his time in Strasbourg, he strived to create an environment suitable for broadly oriented physiological chemical research. Memories of earlier, cramped conditions (he shared his work space at Greifswald with the skeleton of a whale) may have added impetus to his quest for adequate space. The result was the founding of the first independent Institute for Physiological Chemistry within the borders of Germany of that time, which was inaugurated in



Interior of Felix Hoppe-Seyler's Laboratory, located in the Castle of Tübingen. Photograph courtesy of Professor Dieter Mecke, Institute of Physiological Chemistry, University of Tübingen.

1884. A few years earlier, in 1877, Felix Hoppe-Seyler made another important contribution to the recognition of physiological chemistry as an independent academic discipline with the founding of the *Zeitschrift für Physiologische Chemie* which now bears his name as *Biological Chemistry Hoppe-Seyler.*

Despite the very tense Franco-German relationship at the time, Felix Hoppe-Seyler was elected corresponding member of the French Academy of Sciences, which, more than anything else, reflects his international reputation as an enthusiastic promoter of science. He also nurtured ties with Great Britain as is illustrated by his correspondence with Ernest Rutherford. His lab staff was at times an unusual blend of scientists from various countries. Felix Hoppe-Seyler passed away at the height of his scientific career on August 10, 1895 after suffering a heart attack during a stay at his country home in Wasserburg at Lake Constance.

Felix Hoppe-Seyler pursued a wide range of subjects during the course of his scientific career. Along with the previously mentioned research on globins and the investigation of fermentation and oxidation processes, subjects to which he was especially devoted, he also investigated bile acids, lipid metabolism, quantification and classification of proteins and urine components. He also inspired research on nucleic acids which led to the isolation and chemical characterisation of DNA by his students Friedrich Miescher and Albrecht Kossel. Among Felix Hoppe-Seyler's enduring achievements was his early recognition of the importance of the chemical characterisation of biological structures and processes in medicine and his significant contributions to the founding of a new area of research based thereupon. Felix Hoppe-Seyler was one of the pioneers of modern biochemistry and molecular biology.

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