

August Antonius Rauber (1841–1917)

August Antonius Rauber was an embryologist and anatomist who examined gastrulation in avian embryos. He examined the formation of the blastopore, epiblast, and primitive streak during chick development. Subsequent researchers have further studied Rauber's findings, which has led to new discoveries in embryology and developmental biology.

Rauber was born on 22 March 1841 (sometimes given as 8 March old style) in Obermoschel, Germany, and he was the fourth of five children. In the early 1850s, he attended a grammar school in Neustadt, Germany. There he studied arithmetic, natural history, and physics as well as French and English. In 1855 he began formal secondary studies in philosophy at the Gymnasium in Speyer, Germany.

Following his Gymnasium studies, Rauber attended the University of Munich in 1859 to fulfill his father's wish that he become a lawyer. Without missing any law classes, he decided to attend courses in medicine as well. During his time at the university, his teachers included Theodor Bischoff and Nikolaus Rüdinger. Rauber was the assistant preparer in Rüdinger's pathology institute from 1864 to 1866. Rauber passed both the medical and law examinations in his second year at the university. After graduating in 1865, Rauber moved to Vienna to further his medical studies and complete his doctoral dissertation.

Rauber served as military surgeon in the French-German War of 1870. He treated bullet wounds and was able to study the stability and elasticity of bone. After his military service ended in 1872, Wilhelm His offered him a position at the University of Basel in Switzerland. Rauber accepted the position as assistant professor in His's anatomical institute at Basel, and taught anatomy and regeneration of the nervous system of humans and animals.

In 1873, His moved to the University of Leipzig in Germany and wanted Rauber to follow him in order to prepare dissections and to eventually become chair of topological anatomy. Rauber accepted the proposal, but Leipzig's administrators did not agree with His's proposal for Rauber's professorship which led, at least in part, to the ending of Rauber's employment at Leipzig.

During Rauber's time in Leipzig, the relationship between His and Rauber turned less amicable as Rauber challenged a claim that His had made in regard to chick embryology. In the summer of 1874, Rauber began work examining newly fertilized eggs in the chick oviduct. He documented what is now understood as chick gastrulation and believed that his findings were in conflict with what His had observed. His had claimed that the chick embryo was a disc-like structure. Rauber argued that the embryo was better described as a modified gastrula. His and Rauber also disagreed on how the longitudinal axis of an animal developed. The controversy continued as Rauber noted that when His first hypothesized about gastrulation, the figures His made lacked crucial details such as the nuclei, cell membranes, and protoplasm. Rauber was able to explain gastrulation phylogenetically, which His could not do.

On 2 June 1875, after long disputes with His, Rauber relinquished his position as prosector. His was well known and commanded a great deal of respect from those around him, and Rauber's colleagues in Leipzig deserted him. During that time he continued teaching without pay at the Anatomical Institute. Working alone, Rauber wrote articles on gastrulation and created a draft of a classic human anatomy text book, *Anatomie des Menschen*. Rauber also wrote *Cellularmechanik* in 1880 with the intention to explain morphogenesis and heredity.

Rauber received a professorship in 1886 when Carl von Kupffer suggested that Rauber be appointed professor of Anatomy at the University of Dorpat in Tartu, Estonia. Rauber taught anatomy, histol-

ogy, and embryology at the university and worked alongside Alexander Schmidt, Dietrich Barfurth, Max Runge and Emil Kraepelin.

In 1911, Rauber retired and continued his solitary life. He had joined in the social life at Dorpat, but his colleagues abandoned him after he married his Estonian housekeeper, a move that was disapproved at that time. During the winter of 1916, he became ill, but did not seek a doctor. Rauber died on 6 February 1917.

Sources

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