Caspar Friedrich Wolff (1734-1794) [1]

By: Ruffenach, Stephen  Keywords: Biography [2] Epigenetics [3]

Caspar Friedrich Wolff [4] is most famous for his 1759 doctoral dissertation, *Theoria Generationis* [5], in which he described embryonic development in both plants and animals as a process involving layers of cells, thereby refuting the accepted theory of preformation—the idea that organisms develop as a result of the unfolding of form that is somehow present from the outset, as in a homunculus. This work generated a great deal of controversy and discussion at the time of its publication but was an integral move in the reemergence and acceptance of the theory of *epigenesis* [6].

Wolff was born in Berlin, Germany, on 18 January 1734 to Anna Sophia Stiebeler and Johann Wolff, a tailor. He studied medicine at the *Collegium Medico-Chirurgicum* [7] in Berlin from 1753 to 1754 and then enrolled at the *University of Halle* [8], graduating in 1759 with his MD. The controversy created by his dissertation, with its assertions challenging the accepted view of preformationism, made it difficult for Wolff to find work. In particular, his hypothesis was opposed by Albrecht von Haller [9], a strong proponent of the theory of preformation [10]. Wolff attempted to obtain a position at the St. Petersburg Academy of Sciences with the help of Leonhard Euler [11], but was unsuccessful because many of the members of the Academy disagreed with the epigenetic contentions of his work. Wolff became a field surgeon for the Prussian army in 1761.

During his time in the military he gave some lectures at the *Breslau Military Hospital* [12] on the subject of anatomy. He continued to seek a professorship in Berlin, attempting to obtain permission to lecture in 1762 while still in the army, and again as the Franco-Prussian War was ending, knowing that he would be losing his job at the military hospitals because they were closing. He was denied in both instances by the professors of the *Collegium Medico-Chirurgicum* [7]. Because he had been denied one university professorship and foresaw more such denials in the future, Wolff began giving private, unsanctioned lectures on anatomy, physiology, and medicine in Berlin in 1763. In 1764 he published another paper, *Theorie von der Generation* [13], which responded to the criticism of his dissertation and restated his belief in *epigenesis* [6] as the most valid theory of generation. This publication further alienated him from the professors at the college and thus did not help in his pursuit of a professorship.

In 1766, through the tenacity and initiative of Leonhard Euler [11], Wolff was offered a position in the anatomy department of the St. Petersburg Academy of Sciences, which he promptly accepted. Wolff moved to Russia with his wife in 1767. He finished his career working in Russia, writing thirty-one memoirs that were published in the Academy’s Proceedings. He began work on a final paper, *Theory of Monsters* [14], in which he tried to organize his ideas regarding *epigenesis* [6], but suffered a brain hemorrhage that caused his sudden death in St. Petersburg on 22 February 1794.

Wolff is remembered as a founder of modern *embryology* [15] due to the publication of his dissertation, which both rejected the idea of *preformation* [10] and reinvigorated the theory of *epigenesis*. 
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