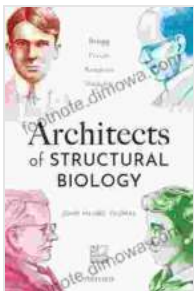


Architects of Structural Biology: Bragg, Perutz, Kendrew, and Hodgkin

The field of structural biology has revolutionized our understanding of the molecular basis of life. The development of techniques such as X-ray crystallography and cryo-electron microscopy has allowed scientists to visualize the atomic structures of proteins, DNA, and other biological molecules, providing unprecedented insights into their function and interactions. This has led to major advances in drug discovery, disease diagnosis, and our understanding of fundamental biological processes.

Four pioneers in structural biology stand out for their groundbreaking work in the mid-20th century: William Henry Bragg, Max Ferdinand Perutz, John Cowdery Kendrew, and Dorothy Mary Hodgkin. Their discoveries laid the foundation for our current understanding of protein and DNA structure, and they were all recognized with Nobel Prizes for their contributions.



Architects of Structural Biology: Bragg, Perutz, Kendrew, Hodgkin by Dan Bortolotti

★★★★★ 5 out of 5

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William Henry Bragg

William Henry Bragg was born in 1862 in Wigton, England. He studied mathematics and physics at Trinity College, Cambridge, and after graduating, he began his career as a professor of mathematics at the University of Adelaide in Australia. In 1895, he returned to England and became the Cavendish Professor of Physics at the University of Leeds.

Bragg's interest in X-rays began in 1912, when he read a paper by Max von Laue on the diffraction of X-rays by crystals. Bragg realized that X-rays could be used to determine the structure of crystals, and he developed a method for doing so that is still used today.

In 1915, Bragg and his son, William Lawrence Bragg, published a paper on the structure of sodium chloride. This paper was a landmark in the field of crystallography, and it laid the foundation for the development of X-ray crystallography as a tool for determining the structure of biological molecules.

Bragg was awarded the Nobel Prize in Physics in 1915 for his work on X-ray crystallography. He continued his research in this field until his death in 1942.

Max Ferdinand Perutz

Max Ferdinand Perutz was born in 1914 in Vienna, Austria. He studied chemistry at the University of Vienna, and after graduating, he worked as a research assistant at the Cavendish Laboratory in Cambridge. In 1936, he moved to the Sir William Dunn School of Pathology at the University of Oxford, where he spent the rest of his career.

Perutz's research focused on the structure of proteins. In 1953, he published a paper on the structure of hemoglobin, the protein that carries oxygen in the blood. This paper was a major breakthrough in the field of structural biology, and it provided the first detailed look at the structure of a protein.

Perutz was awarded the Nobel Prize in Chemistry in 1962 for his work on the structure of hemoglobin. He continued his research in this field until his death in 2002.

John Cowdery Kendrew

John Cowdery Kendrew was born in 1917 in Oxford, England. He studied chemistry at the University of Oxford, and after graduating, he worked as a research assistant at the Cavendish Laboratory in Cambridge. In 1946, he moved to the Sir William Dunn School of Pathology at the University of Oxford, where he spent the rest of his career.

Kendrew's research focused on the structure of proteins. In 1958, he published a paper on the structure of myoglobin, the protein that stores oxygen in muscle cells. This paper was a major breakthrough in the field of structural biology, and it provided the first detailed look at the structure of a globular protein.

Kendrew was awarded the Nobel Prize in Chemistry in 1962 for his work on the structure of myoglobin. He continued his research in this field until his death in 1997.

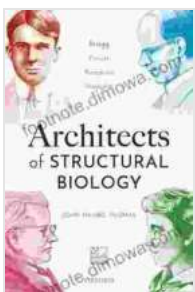
Dorothy Mary Hodgkin

Dorothy Mary Hodgkin was born in 1910 in Cairo, Egypt. She studied chemistry at the University of Oxford, and after graduating, she worked as a research assistant at the Sir William Dunn School of Pathology. In 1934, she moved to the University of Cambridge, where she spent the rest of her career.

Hodgkin's research focused on the structure of small molecules and proteins using X-ray crystallography. In 1945, she published a paper on the structure of penicillin, the antibiotic that is used to treat bacterial infections. This paper was a major breakthrough in the field of structural biology, and it provided the first detailed look at the structure of an antibiotic.

Hodgkin was awarded the Nobel Prize in Chemistry in 1964 for her work on the structure of penicillin. She continued her research in this field until her death in 1994.

The work of William Henry Bragg, Max Ferdinand Perutz, John Cowdery Kendrew, and Dorothy Mary Hodgkin has revolutionized our understanding of the molecular basis of life. Their discoveries have led to major advances in drug discovery, disease diagnosis, and our understanding of fundamental biological processes. They are truly the architects of structural biology, and their legacy will continue to inspire future generations of scientists.



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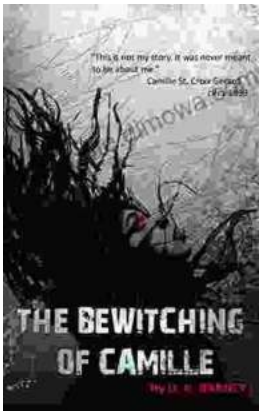
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