

Oswald T. Avery, M. D.

Dr. Oswald T. Avery chose to devote the greater part of his scientific life to the study of one of the most potent, and until recently one of the most fatal, pathogenic agents that inflict mankind, the bacterium, pneumococcus. To this great adventure he brought the highest qualities a scientific investigator can possess, thorough preparation, intellectual curiosity, persistence, insight, understanding, imagination and ingenuity, tempered by critical judgment.

In his chosen pursuit through the years he has not only added brilliantly to knowledge of an important group of microorganisms but he has enriched immeasurably the science of infectious disease.

In perusing his long and coherent bibliography one can readily follow step by step his progress toward the elucidation of fundamental aspects of infection, particularly after his interest became centered upon the pneumococcus about 1915, during the first World War. Investigations of the types of these microorganisms involved in human infections, their detection, classification and their response to immune serums, were followed by studies of specific immunizing substances elaborated by them. These investigations led to chemical studies of constituents of the pneumococcus as they related to biological characteristics and immunizing potentialities, which eventuated in one of his greatest contributions namely, the discovery and identification of the capsular polysaccharides and their relation to specificity of type. The immunological relationships of other cellular constituents of the microorganisms were elucidated, and finally his description of the antigenic constitution of the pneumococcus became the most complete model for the analysis of other infectious agents and he himself became one of the recognized founders of the science of immunochemistry.

With the broad biological insight which he brought to bear upon these problems and the penetrating analysis which his investigations entailed, he was eventually equipped to undertake studies that more recently led to what might well be the crowning achievement of his scientific career namely, investigations of the chemical nature of the substance which induces transformation of pneumococcal types, and biochemical studies of environmental factors essential thereto. In these classic contributions evidence is presented that the transforming substance is of the nature of a desoxy ribonucleic acid that acts much like a gene. The fundamental nature of these discoveries have far reaching implications for basic understanding of heredity and environment as well as for extension of knowledge of infection.