

Twelve Diseases That Changed Our World

Irwin W. Sherman

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Twelve Diseases That Changed Our World offers engaging observations on a dozen diseases to serve 2 goals. The opening chapters meet the title's promise by tracing the impact of hereditary blood disorders porphyria and hemophilia on the succession of European monarchs in the 16th through 18th centuries. Also presented is a riveting account of the consequences of a potato blight in 1840s Ireland, which forced migration of millions to England and North America. Thereafter, the book turns to the topic of infectious diseases and the lessons learned from earlier responses to "unanticipated outbreaks of disease" to inform preparedness for future outbreaks. Specifically, the chapters are devoted to the study of cholera, smallpox, bubonic plague, syphilis, tuberculosis, malaria, fever, influenza, and AIDS. These topics are familiar territory for Dr. Sherman, who recently authored *The Power of Plagues*, in which he also examines 7 of these infections; his command of the subject matter is evident.

Each chapter is packed with information ranging from pathogenesis and clinical manifestations to epidemiologic calculations and antimicrobial drug resistance. A limited number of references are provided in the concluding book notes, grouped by chapter and page number, which offer additional resources for readers seeking more information. Of particular interest is the book's accounting of 19th-century pioneers in epidemiology and infectious diseases. John Snow's use of early epidemiologic

tools to associate cholera deaths with water from the Broad Street pump, Louis Pasteur's development of vaccines, and Robert Koch's discovery of tubercle bacillus and the cholera vibrio all get their deserved attention; Florence Nightingale's use of numerical data to demonstrate improvements in patient hygiene comes as a pleasant surprise. A concise volume written for the general reader, *Twelve Diseases That Changed Our World* provides an excellent foundation for the study of public health and infection control.

John W. Ward*

*Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Address for correspondence: John W. Ward, Centers for Disease Control and Prevention, Division of Viral Hepatitis, 1600 Clifton Rd NE, Mailstop G37, Atlanta, GA 30333, USA; email: jww4@cdc.gov

Superantigens: Molecular Basis for Their Role in Human Diseases

Malak Kotb and John D. Fraser, editors

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This collection of short reviews by experts in the field provides a complete overview of microbial superantigens, an unusual family of proteins that form an abnormal linkage between the major histocompatibility complex class II antigens and specific T-cell repertoire V β families. This linkage leads to the nonspecific acti-

vation of large numbers of regulatory T lymphocytes, producing cytokine storms that can have a variety of serious clinical consequences.

The book is organized into 5 sections with a total of 16 chapters. The first section is an overview of the breadth and scope of superantigen research, including an up-to-date catalog of superantigens characterized from both bacteria and viruses, their cellular interactions, and disease associations. The next 3 chapters deal with the 3-dimensional structure, function, and diversity of superantigens, including an account of the critical involvement of zinc in the optimal binding of some of these proteins. Section 3 contains an entire chapter that describes the pathophysiology of superantigens in both acute and chronic skin disorders. Several chapters in section 4 describe in vitro and animal model systems for the study of diseases caused by superantigens, including autoimmune disease, neuropathology, toxic shock, and others.

The final 4 chapters in section 5 detail various therapeutic approaches for superantigen-mediated diseases. These approaches include conventional antibiotics, antagonistic peptides, intravenous immunoglobulin, antibodies directed to T-cell costimulatory receptors, and superantigen receptor mimics, in addition to existing and experimental approaches. An unnumbered section after the first chapter contains high-quality color plate illustrations, which collectively provide outstanding visual support for several chapters.

Superantigens affords a comprehensive look at the current state of knowledge regarding these interesting proteins in a relatively compact volume. The text is certainly a must-read for any scientist engaged in their study but will also prove a rewarding read for microbiologists interested in this curious interaction between microbes and the immune system.