Over the past 20 years, a rich seam has been mined in immunology: identifying how parasites avoid, block, or subvert the host’s immune defenses (here, “parasites” is used in the broad sense, to denote helminths, protozoa, bacteria, and viruses). The purpose of this book is to review the current state of knowledge in selected examples of infection and to provide reviews of certain mechanisms that parasites use to overcome host defenses.

The comprehensive reviews presented in this book illustrate the great wealth of detail regarding the knowledge of the molecular mechanisms of immune subversion by parasites that has been gathered in the past 20 years or more. In most cases, however, we lack a clear understanding of the relative importance of these different mechanisms. Koszinowski and Jonjic identify the problem: “Given the complexity and redundancy of regulatory circuits, future efforts should concentrate on the description of functional hierarchies … [to] reveal the biological framework [and to lead to] more efficient prophylaxis and treatment of virus-induced pathology” (p. 40).

The recent explosion in knowledge of the innate immune system, in particular, has transformed our understanding of the immune response to infection—especially at the early stage of initiation of the response, when critical signals delivered by the pathogen help to determine whether a response is mounted and to steer the response in a particular direction. Many of the molecular mechanisms described in this book help to explain why the host fails to rid itself of the parasite in question, which therefore becomes persistent. In many infections, however, the risk or the severity of disease depends strongly on the load of the parasite, either during a transient infection or when an equilibrium is established between host and parasite in a chronic infection. What is now needed is a deeper understanding of the factors that determine the efficiency of the host’s immune response to a given pathogen. This applies both to microparasites, such as bacteria and viruses, and to macroparasites, such as helminths. This broader “systems” approach, however, is less evident in this book, which concentrates on the detail of individual mechanisms.

A more recent, rapidly developing phase of understanding of the host’s defense against microparasites is the study of the still-nascent field of intracellular defense mechanisms. This field is also not strongly or explicitly represented in the current volume of this text.

The book is divided into 3 broad sections: there are 3 chapters each on the subversion of the innate immune response, the subversion of the immune system by microorganisms, and the subversion of immunity by viruses. These chapters are very unequal in length, ranging from 23 pages (with 2 pages of references) on dendritic cells to 70 pages (with 34 pages of references) on the effects of helminths on the immune system. In certain chapters, there is an excessively long introduction to the particular pathogen and its associated diseases. As a result, although these chapters serve as comprehensive, self-contained reviews of the individual infections, the book’s theme of immune subversion becomes somewhat diluted. This variation gives a strong impression of a very light editorial hand. In addition, the subediting was done somewhat poorly, as is evidenced by wayward spelling, punctuation, and syntax. In their brief forward, the editors point out that certain intended chapters are missing because the authors of these chapters failed to deliver the material on time. The editors also acknowledge that the book is only a brief survey of a large and burgeoning field.

The main shortcoming of the book is the lack of an index. Even more useful than this, however, would be a searchable electronic version; it is almost easier to search for a reference on a given topic using online databases than to search back through a chapter one has read.

In summary, each chapter in the book is individually excellent; however, the usefulness of the volume as a whole is limited by the lack of an index. Furthermore, the book lacks unity because of the somewhat small and arbitrary choice of pathogens that is discussed and the variability of length and detail that is present among the chapters.

Acknowledgments

Potential conflicts of interest. C.R.M.B.: no conflicts.

Charles R. M. Bangham
Department of Immunology, Wright-Fleming Institute, Imperial College, London, United Kingdom

New Books Received

