

Thorny controversies

Fred S. Rosen

Metchnikoff and the Origins of Immunology: From Metaphor to Theory. By Alfred I. Tauber and Leon Chernyak. Oxford University Press: 1991. Pp. 236. £35, \$45.

Le Dernier Langage de la Médecine: Histoire de l'immunologie de Pasteur au Sida. By Anne Marie Moulin. Presses Universitaires de France: 1991. Pp. 447. FF220.

MORE than any of his contemporaries, Ilya Metchnikoff (1845–1916) has remained an appealing scientific figure a century after his work flourished. Intelligent, sensitive, neurotic to the point of being suicidal, and principled in his disdain of the tsarist bureaucracy, he ultimately found his fulfilment and a sense of optimism after his Hegira to Messina in Italy. There, by the Sicilian shore on a Saturday afternoon in December 1882, he inserted bits of a rose thorn into some starfish larvae and found that they were ingested by mesodermal cells that later came to be called phagocytes. This moment in the history of science is of the same genre as Archimedes in the bathtub or Newton under the apple tree; it appears to be a moment of brilliant insight unconnected to any past endeavour.

Not so. Tauber and Chernyak have explored in some excruciating detail the origins of Metchnikoff's experiment and once again have shown the truth of Pasteur's wisdom, that chance favours the prepared mind. For two decades before the Messina experiment, Metchnikoff had been deeply involved in the study of comparative embryology and the digestive function of embryonic cells. The acrimonious scientific debates with Haeckel and other German progenitors of embryology over problems of gastrulation paved the way for the more monumental struggle between the cellular and humoral advocates of immunity that was to be engendered by the discovery of phagocytosis.

Tauber and Chernyak have produced a scholarly and detailed study of the origins of the deep and long controversy between the cellular and humoral basis of immunity; it does not provide light reading. The exegesis of the controversy continues unabated because it is important to understand its origins — it set back the progress of the science of immunology by many decades. In the end, everybody almost had it right. On the way to understanding the basis of immunological specificity, those who

thought deeply about the subject became enmeshed in complex metaphysical ideas, from Metchnikoff and Ehrlich to Medawar, Burnet and Benacerraf. In the end one has to fault Metchnikoff for not considering the basis of immunological specificity. It is comforting to speculate that, had he done so, much of the acrimony would have been assuaged. The recent frenzied activity and elegant work on antigen presentation is a direct intellectual heritage of the ideas about intracellular digestion first laid out by Metchnikoff; certainly he would be pleased by the recent discoveries of how intelligently phagocytes behave.

Moulin has produced a more light-hearted volume on the history of the controversy. Although she claims to be

Wedded to calamity

Allen H. Perry

Natural Hazards. By E. A. Bryant. Cambridge University Press: 1991. Pp. 294. £40, \$79.50 (hbk); £14.95, \$29.95 (pbk).

THERE are many books now on natural and environmental hazards. Despite its boast, this one is not the first to offer an "inter-disciplinary approach which concisely and clearly explains how natural hazards occur and analyses specific case-studies of major historical and recent disasters". It is hard to judge just to whom this academic, coffee-table-format book will most appeal. The fly leaf says lay readers, students and professionals, but I feel that these groups will find the book less than satisfactory for their purposes. Although well illustrated with maps, diagrams and pictures, this is hardly a work of popularization. With its world-view, albeit with an Australian perspective, it is probably too sweeping a survey for most serious students of the field. Bryant does, however, provide good introductory reading lists of main papers and books at the beginning of each section, as well as an extensive glossary of terms to help the nonspecialist reader.

The arrangement of the chapters into three main sections — climate hazards, geological hazards and social impacts — perpetuates the old-fashioned and artificial division of hazard types. Land instability, for example, often arises from climatic extremes. It is also to be deplored that Bryant treats the effects of different hazards on individuals and societies quite separately from the causes, physical mechanisms and frequencies of the main hazard types. Indeed, too little attention to society-environment relations may often be the cause of hazards in the first place. At a time when a more holistic attitude to hazard studies is rightly gaining ground, this text seems to lack integration. Another unfortunate effect of the divisional approach is that it implies that hazards are, as K. Hewitt put it, "accidental rather than characteristic features of the places and societies where they occur, somehow roped off from the rest of man-environment relations". Such an attitude is established early in the first chapter when we are told that "this book is concerned foremost with the various ways that nature can wreak havoc upon humans".

To suggest, in light of today's unprecedented level of environmental change, that humans have little influence in turn-

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Metchnikoff — Nobel prizewinner in 1908.

concerned with the semiotics of immunology, she has, in fact, produced a straightforward history of the subject. It does not have the scholarly depth of Arthur Silverstein's recently published book on the same subject (*A History of Immunology*, Academic Press, 1989); it is more appropriate for scientists in other fields or for the lay public. The subtitle "History of Immunology from Pasteur to AIDS" is misleading, because Moulin says little about Pasteur and even less about AIDS. Instead, she provides a charming discussion of the characters involved in the evolution of recent immunology and an illuminating look at their contributions to the field. It is tempting to say that a profound exposition of a subject can be produced only by a worker in the field, but *The Eighth Day of Creation* and such other well-written scientific histories belie that costive assertion. Our present ignorance of the immunopathogenesis of AIDS makes it certain that further volumes will be forthcoming before we are completely enlightened about the mechanism of immunity. □

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