

Book Review

***Western Diseases: An Evolutionary Perspective.* Tessa M. Pollard**

Cambridge, UK: Cambridge University Press, 2008. 233 pp. ISBN 978-0-521-85180-0 (cloth) £75; ISBN 978-0-521-71737-6 (paper) £35.

In the course of a few generations, conditions that were once rare, such as obesity, diabetes, hypertension, and heart attacks are now contributing to a global epidemic of metabolic disease. As one of its core questions, the field of evolutionary medicine seeks to understand the origins of these health trends. A central assumption is that the human genome gradually became adapted to the diet, behavior, and reproductive and social practices of our ancestors, who subsisted for several million years as band-level foragers. The slow pace of genetic change means that these genetic adaptations linger as a sort of biological memory of ancestral experience, and the health impacts of our current lifestyle can best be understood as an interaction between that memory and the dramatically changed diet and lifestyle that many of us experience today. In *Western Disease: An Evolutionary Perspective*, Tessa Pollard provides an up-to-date and very readable overview of current thinking about the evolutionary forces that have shaped our predispositions to chronic lifestyle disease.

After a brief introductory chapter, Chapter 2 surveys historical and evolutionary changes in human health and disease, highlighting the likely conditions faced by ancestral foraging populations and the changes in nutrition, lifestyle, environment, and pathogen exposure that emerged with major socio-demographic and economic shifts, including the rise of agriculture, industrialization, urbanization, and the modern industrial economy and globalized capital. Chapter 3 considers the impacts of these recent lifestyle changes on obesity, diabetes, and cardiovascular diseases. This discussion continues in Chapter 4 with in-depth coverage of debates about the thrifty genotype and thrifty phenotype hypotheses and their respective merits and implications for understanding current trends in diseases.

Chapter 5 focuses on the impact on health of recent changes in reproductive practices, such as

more frequent cycling, fewer pregnancies, and later onset of first pregnancy and their collective impact on lifetime exposure to carcinogenic gonadal steroids. Chapter 6 focuses on other emerging problems related to female and male infertility, the health consequences of contemporary changes in the feeding of infants, and evolutionary thinking about the origins and consequences of the unique pattern of reproductive senescence in the human female, which experiences an abrupt shutdown at the menopause—several decades prior to functional decline in other bodily systems.

Chapter 7 surveys current ideas about the causes of the recent rise in autoimmune conditions like asthma and allergy, with an emphasis on changes such as a reduction in breastfeeding and the possibility that immune function organizes itself around early exposure to pathogens, and thus, that the recent rise of hygienic conditions may fail to provide the necessary input for the system to develop properly. Chapter 8 closes out coverage with a focus on depression and stress, and considers the ways that modern cultural and social environments contribute to these psychological states, and their downstream effects on behavior, biology, and health.

This is a very nicely written synthesis that deftly surveys a vast research terrain. Although comprehensive in its coverage, the book does not provide a grand synthesis of the various ideas presented. As such, it does not break new ground. Instead, it excels primarily as an overview of the major chronic conditions and existing hypotheses and controversies about their origins and their rapid rise. This focus on presenting competing ideas while largely withholding judgment may be precisely what many are seeking.

The book will be of particular interest to epidemiologists, public-health practitioners, medical researchers, anthropologists, and clinicians who study or treat the specific conditions covered, such as asthma, diabetes, and obesity. It is thorough in coverage and nicely referenced, and thus serves as an excellent entry into the many literatures and debates surrounding the origins of western disease. It is written in a pleasant style that critically reviews hypotheses while not getting bogged down in details. As a result, it will be accessible to advanced

undergraduates, medical students, graduate students, and academics from a wide range of disciplines.

At the bicentennial of Darwin's birthday and the 150th anniversary of his publication of the *Origin of Species*, biomedical knowledge remains largely abstracted from the historical and evolutionary forces that created human biology and that now condition our biological response to the rapidly changing environments and experiences of contemporary life. For better or worse, human lifestyles continue to change at an accelerating pace. *Western Diseases* is

a handy survey of how this change and the rise of many chronic degenerative conditions are linked. It should be widely read and discussed.

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doi: 10.1093/icb/icn099