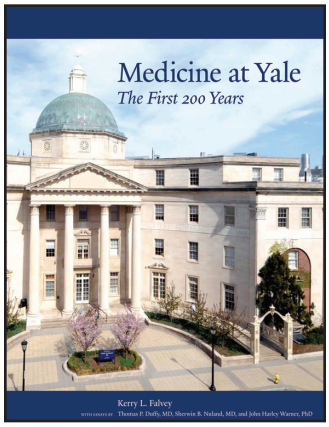
YALE JOURNAL OF BIOLOGY AND MEDICINE 84 (2011), pp.173-176.

Book Reviews

Medicine at Yale: The First 200 Years. *By Kerry L. Falvey. New Haven, Connecticut: Yale University Press; 2011. 246 pp. US $50.00 Hardcover. ISBN: 978-0300167306.*

In the 18th century, there was no standardized training for practitioners of medicine (or "physic(k)," as it was referred to at the time). The level of care sick individuals received was proportional to their social status, and diagnosis and treatment of illnesses varied widely between doctors. *Medicine at Yale: The First 200 Years* is the story of the evolution of medical training and practice from the time when the Yale Medical Institution first received its charter in 1810 until the present. The narrative is laid out as a continuing timeline, broken down into four 50-year segments. Each segment begins with an essay describing the medical culture at Yale and continues with scattered paragraphs and essays about influential occurrences and discoveries made at Yale during the relevant period.



When Yale opened the doors of the sixth medical school in the United States in 1813, its students were required to behave in accordance with the laws of the school, which meant that they were "not permitted to assault . . . the President . . . nor were they permitted to wear women's apparel, or pick locks, or commit like crimes." The fledgling medical school managed to survive harsh critiques, monetary troubles, and charges of grave robbing and became a highly respected medical institution that receives more funding from the National Institutes of Health per faculty member than any other school in the country. Yale University has been the home of such accomplished individuals as Harvey Cushing (first successful brain surgeon), Seymour R. Lipsky (inventor of High Performance Liquid Chromatography), Paul Greengard (Nobel Laureate for his work on neurotransmitters), George E. Palade (discovered the ribosome), Joan Steitz (discovered snRNPs) and Thomas Steitz (Nobel Laureate for his work on ribosome structure). Yale has seen myriad medical advances, ranging from the development of tissue culture techniques to the creation of the first artificial heart, and the discovery of therapies such as the "morning-after" pill and the HIV therapy D4T.

In recent years, Yale University has continued to expand its medical and research facilities with the addition of the West Campus in 2007 and the Smilow Cancer Center, which opened in 2009. And just as the book concludes with a series of essays about the future of medical practice, so, too, is the reader left feeling that there is much more to come. *Medicine at Yale: The First 200 Years* offers glimpses into the history of both Yale Medical School and the medical community in general while endorsing the notion that we will continue to see comparable medical advancements in the next 200 years. Yet although the book's primary focus is the development of medicine, it also provides fascinating insight into the cultural modalities of the past two centuries. It is this integration of history,

science, and culture that makes this book a fun read for audience members from all walks of life.

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Genetics of Original Sin. *By Christian de Duve and Neil Patterson. New Haven, Connecticut: Yale University Press; 2010. 256 pp. US $26.00 Hardcover. ISBN: 978-0300165074.*

The continuous repetition of Christian de Duve's primary thesis in *Genetics of Original Sin* ensures that however little the reader understands or is interested in biology, he will have no doubt as to the author's primary concern: Natural selection has made humans poor prognosticators. As evolutionary adaptation is all about living (and reproducing) in the moment, humans have evolved some unfortunate traits and are headed toward a Very Bad End, unless drastic change is implemented. The reader is also certain to realize de Duve's good news, namely that humans alone can (and must) change their nature. The particulars here, however, are vague and underdeveloped as de Duve loses the clarity and insight he brought to the first three-quarters of the book.

Genetics of Original Sin is divided into four parts. "The History of Life on Earth" provides proof of evolution; "The Mechanisms of Life" lays out the rudimentary biology needed to understand de Duve's main objectives, and in "The Human Adventure," human evolution, in particular, is described. Finally, "The Challenges of the Future" includes the author's speculations and suggestions about ways to avert the coming apocalypse.

The book draws intriguing parallels to the Christian narrative of evil entering the world through original sin (here played by natural selection) and subsequent redemption (the role of redeemer now played by humankind). De Duve carries this comparison throughout the book and returns again to religion (including the major monotheistic and Eastern traditions) in the final section as a vehicle for changing human nature. The book is careful to distinguish between claims that can be proven by science (evolution) and those that cannot be refuted by science (the existence of God). This crucial distinction prevents de Duve from alienating religious readers. Such readers are important because a primary purpose of the book is to encourage religion as a means to carry the author's message of human responsibility to the Earth — namely, to reduce the population and curb our more destructive impulses.

Overall, the book is a pleasure to read. While the author is certainly no Nathaniel Hawthorne, the prose is pleasantly poetic and the vocabulary extensive, indicative of a well-read individual. The science, as de Duve describes it, remains straightforward and simple, but the ideas he presents and parallels he draws are not, making the book a worthwhile read for biologists as well as politicians and religious leaders. Through the use of careful analogies and clear transitions, de Duve makes biology accessible to virtually any reader. In addition, *Genetics of Original Sin* often provides a historical context for scientific discovery, describing biological innovation as the work of individuals, thereby heightening the drama of science.

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Wetware: A Computer in Every Living Cell. *By Dennis Bray. New Haven, Connecticut: Yale University Press; 2011. 280 pp. US $18.00 Paperback. ISBN: 978-0300167849.*

A cell's survival depends on how well it can detect and respond to environmental cues. In this sense, a cell is an organically derived computer — it takes input from its surroundings (there is no food!) and uses logic circuits (activate specific gene and pro-