is a powerful and uncluttered narrative at work here: for thousands of years, humans and the quiet killers have lived in uneasy equilibrium, and this balance has been tipped one way by wars, famine, and the disruption of local ecology and the other way by improvements in hygiene and scientific awareness.

Baker compares the struggle to “an ungloved boxing match between two prize-fighters . . . both have exchanged near-killer blows but neither has quite had the other out for the count.” Humankind, he contends, has squandered the opportunity to usher in a “Golden Age of protection from disease” and may even be facing a resurgent enemy. Baker writes, “Drug-resistant HIV disease, TB [tuberculosis], MRSA [methicillin-resistant Staphylococcus aureus], malaria — each is a real hazard; the further dangers of new emerging diseases such as Nipah, and Influenza A . . . are ever with us.”

This statement is a little harsh. Microbes have proved capable of an acrobatic adaptability that few could have predicted. The massive advances in medical science since the invention of the microscope, which are carefully outlined by Baker, should not be overshadowed by the follies of the past century. Besides, it is not the fault of the field of microbiology that malaria continues its noxious reign over sub-Saharan Africa and that the British public remains skittish of the measles, mumps, and rubella vaccine.

Still, Baker remains quietly optimistic. He brings us up-to-date on the latest developments in the field, including “designer” antibiotics, antimicrobial peptides that are derived from the human body, and proteomics, the use of advanced computers for the virtually instantaneous analysis of thousands of proteins. As always, the science is addressed in clear and lucid terms.

Nor does Baker lose his poise when tackling emotive geopolitical issues. His discussion of the pharmaceutical industry is one example. Baker draws our attention to the possible ramifications of a company freely distributing a much-needed drug to an impoverished part of the world. What would be the legal consequences if someone became ill as a result of the medication? And where would the decision leave the state of research by pharmaceutical companies into new, more effective treatments if the profit margin became severely squeezed? For Baker, the real problem lies in the lack of funding available to universities. He notes that in Britain, this has led to professorial chairs in microbiology going unfilled. “Being a chair with no research money,” he quips, “is like being a eunuch in charge of a harem; and one which hasn’t even got any women in it.”

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VACCINATED: ONE MAN’S QUEST TO DEFEAT THE WORLD’S DEADLIEST DISEASES


Vaccines topped the list of the most important public health achievements in the United States at the close of the 20th century and contributed decades to the life expectancy of children who were born in the vaccine era. Yet vaccines today generate more controversy than praise, and they remain an invisible resource to the public, hanging in a precarious balance between success in the realm of public health and financial failure in the private sector. Vaccinated, a biography of Maurice Hilleman, is a testament to the effect of one man’s efforts to prevent disease through the development of vaccines. Remarkably, Hilleman spent his life in relative anonymity, despite his creating and marketing many of the world’s most successful vaccines and saving millions of lives in the process.

Hilleman was born on a farm in Montana in 1919, in the midst of the great influenza pandemic. His twin sister, Maureen, was stillborn, and his mother died of eclampsia within days after his birth. Hilleman was left in the care of his aunt and uncle, who lived down the road from his father and older siblings. Of those early years, Hilleman said he felt as though he had “cheated death” and that his father and uncle had most influenced his career and life choices. Hilleman went to Montana State University and, unable to
afford medical school, attended the University of Chicago on a full scholarship, where he completed a doctoral degree in microbiology. He worked at E.R. Squibb and then at the Walter Reed Army Medical Research Institute, where he was responsible for the rapid production and mass distribution of influenza vaccinations during the 1957 influenza pandemic. Shortly thereafter, Hilleman became director of virus and cell biology at Merck Research Laboratories. He spent the remainder of his career at Merck, creating almost three dozen vaccines, many of which are still widely used and remain as his legacy.

Author Paul Offit is himself a noted vaccinologist and the Maurice R. Hilleman Professor of Vaccinology in the Department of Pediatrics at the University of Pennsylvania School of Medicine. Offit deftly intertwines the progression of Hilleman's career with the evolving science and politics of vaccination in the United States. He recounts in lay terms the significance and development of many of the vaccines that Hilleman championed. He presents these accounts in roughly chronological order, stopping along the way to discuss the principles of vaccinology from the time of Edward Jenner and Louis Pasteur to the work of John Enders, Thomas Weller, Jonas Salk, Albert Sabin, and others and continuing to the present. Also included is a provocative discussion about vaccinology within the context of the social and political forces that Hilleman faced.

The book is well referenced and is based in part on interviews with Hilleman, with his colleagues and family, and with many of the prominent vaccine researchers of the past century. The book provides an enlightening glimpse into the complex interface between public health and private industry, and it chronicles the ability of a singularly tenacious person to bridge the void between the two and save more lives than perhaps any other scientist in history.

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