

and the band director asked for a volunteer to take up the oboe. But she had to strike a devil's bargain, submitting to her father's demands in order to get rides to lessons. Butler escaped to music school at Mannes, but the lasting effects of her mother's indifference and her father's abuse wrought havoc on her personal life, specifically in the men she chose to date and the one whom she briefly married. She learned painful lessons, and shares them courageously along with her hard-earned wisdom about what to hold onto and what to let go. In the end, this is a moving account of how passion and creativity can be powerful weapons against neglect, cruelty, and self-harm. (Feb.)

Systematic: How Systems Biology Is Transforming Modern Medicine

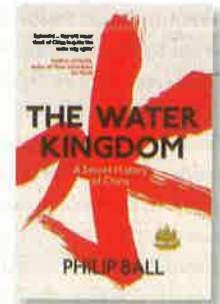
James R. Valcourt. Sigma, \$27 (288p)
ISBN 978-1-63286-029-3

Amazing phenomena occur when cells work together, writes Valcourt in this accessible introduction to systems biology, a field with a distinguished history that took off at the beginning of the 21st century. Combining engineering, mathematics, and advances in computing technology, scientists are learning how the innumerable elements in a complex organism work in concert. Valcourt offers as an example the seemingly miraculous workings of the human brain. A single brain cell simply fires an electric pulse, but 86 billion connected brain cells enable a person to think, feel, imagine, and wonder. Systems biologists are studying that kind of leap from simple action to complex behavior. Valcourt visits laboratories where researchers are examining the mechanism of aging, the specific genetic errors that make a cell malignant, why useful drugs produce nasty side-effects, and why the immune system overreacts (provoking allergies) or underreacts (ignoring cancers). Understanding these processes will transform human lives, but despite the book's title, at present the field's triumphs are largely confined to the laboratory; as Valcourt admits, many ongoing attempts to unlock these secrets will fizzle. Still, systems biologists seem on the verge of achieving great things, and Valcourt delivers a lucid introduction to this ingenious combination of the hard sciences

★ The Water Kingdom: A Secret History of China

Philip Ball. Univ. of Chicago, \$30 (320p) ISBN 978-0-226-36920-4

Science writer Ball (*Patterns in Nature*), whose *Life's Matrix* is a biography of water, detours into history to examine the place of water in Chinese culture, as both real substance and metaphorical ideal. The work is structured quasi-chronologically, and after an introductory chapter on China's two great rivers—Yellow and Yangtze—Ball delves into the myths and legends of the Middle Kingdom. Working his way forward, he covers various hydrological events, which are often linked to dynastic change, and addresses myriad water-related topics, including the treasure fleets of Admiral Zheng He and a survey of warfare via water. Noting water's centrality to Chinese culture, Ball discusses water imagery and symbolism in Confucianism and Daoism, and in painting and poetry. Reaching the modern era, Ball grants due attention to Mao's symbolic swimming of the Yangtze and the construction of the Three Gorges Dam. Though every nation's culture, politics, and intellectual life are interrelated, Ball makes clear that it's impossible to fully understand China's without incorporating the effect of water on each of those elements, to the point where "water management becomes a moral issue" and the basis of an "orderly and 'good'" society. This is a one-stop examination of water's primacy in Chinese history, and a well-written one at that. (Apr.)



and advanced technology that adopts a holistic view of natural phenomena. (Feb.)

★ The Vaccine Race: Science, Politics, and the Human Costs of Defeating Disease

Meredith Wadman. Viking, \$30 (448p)
ISBN 978-0-525-42753-7

Wadman, staff writer for *Science*, depicts the cutthroat competition, ugly politics, brilliant science, and questionable ethics that underscored the research and development, during the 1960s and '70s, of vaccines that have protected many millions of Americans from rubella, polio, rabies, and other diseases. She provides an excellent introductory primer on cell biology to complement colorful sketches of the personalities of the pioneering biologists who produced the first live vaccines while challenging scientific tenets and medical ethics. The book is not for the squeamish. Wadman details the surgical and laboratory processes scientists used to develop vaccines, and describes the testing of vaccine prototypes on both children and adults—done mostly without their consent, in orphanages, asylums, schools, and prisons. She also documents the beginnings of the biotechnology industry in the 1980s and the concomitant rise and fall of

Leonard Hayflick, who created the crucial WI-38 cell strain and entered into multimillion-dollar business agreements before coming under investigation by the National Institutes of Health and getting embroiled in a much-publicized court battle with the U.S. government over ownership of the valuable cells. This is an exemplary piece of medical journalism, and Wadman makes strikingly clear the human costs of medical developments as well as the roles of politics and economics. (Feb.)

We'll Always Have Casablanca: The Life, Legend, and Afterlife of Hollywood's Most Beloved Movie

Noah Isenberg. Norton, \$27.95 (336p)
ISBN 978-0-393-24312-3

Isenberg (*Edgar G. Ulmer: A Filmmaker at the Margins*) has created a thorough and impassioned account of the making of the 1942 Hollywood classic starring Humphrey Bogart and Ingrid Bergman. He begins with *Casablanca's* modest origins in an unproduced three-act play and ends with its lasting cultural impact. Along the way, he makes a strong case for the film as an ideal example of studio collaboration. Isenberg emphasizes the contributions of nearly everyone at Warner Brothers, including producer Hal B.