as efforts at regional collaboration of the sort the author advocates.

Despite these shortcomings, *Regional Advantage* provides a much-needed synthesis of research on the subject and a wealth of useful information on America's premier high-technology regions. One can only hope that the author will extend her analysis to address the more problematic aspects of American-style high-technology networks.

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Disease and Dread

Silent Travelers. Germs, Genes, and the "Immigrant Menace." ALAN M. KRAUT. Basic Books, New York, 1994. xiv, 369 pp., illus. $25.

Accounts of American immigration have seldom focused in detail on the multiple health issues surrounding the arrival of millions of people to our shores during the past three centuries. Cultural and political issues dominate most historical reviews, with an occasional remark about the lack of hygiene and physical fortitude of many newcomers. But, as Kraut remarks in his introduction to *Silent Travelers*, the first encounter for most immigrants landing on our shores has been with a physician. I vividly remember a gray Saturday afternoon in late September 1958 as the freighter bound for Brooklyn that carried me to my new life in America stopped near the quarantine station at Staten Island. Soon, physicians of the U.S. Public Health Service climbed on board to check our health certificates and study with great care my chest x-ray revealing a primary, calcified tuberculous lesion I had acquired during a clinical rotation in a sanitarium while going through medical school. My future career was at stake; an unfavorable medical judgment would have meant isolation and possible repatriation.

"Members of the New York Municipal Board of Health (foreground) armed with a bottle of carbolic acid to fight off cholera arriving in the port of New York, 1883." [From *Silent Travelers; Puck*]

Much has been learned in recent decades about the shifting ecology of human disease, its temporal and geographical dynamics, and, most important, the impact of migration. Drawing on a series of epidemiological and immunological findings, we now can speak of "virgin-soil" epidemics, episodes of mass disease occurring in isolated populations previously untouched by particular bacterial or viral agents introduced through contact with carriers and victims of these diseases. While the stark reality of successive and devastating epidemics decimating indigenous populations is now widely accepted, demographers, historians, and epidemiologists remain divided about the scope and rate of human destruction and about its causes. As with all instances of sickness, further susceptibilities to disease turn out to be genetic.

The subtitle of Kraut's book, "Germs, Genes, and the 'Immigrant Menace,' " thus provides readers with a clue to the author's intentions: to chronicle a series of epidemic encounters between immigrants and established American residents, from Columbus's first voyages to the New World until the early 1990s, when a resurgence of drug-resistant tuberculosis was in part blamed on Asian newcomers. Though the biological factors operative in such exchanges of disease are mentioned, Kraut is primarily concerned with the social aspects of these encounters. The book vividly documents the construction of a particularly virulent strain of xenophobia in America that is still very much alive today, as demonstrated by events surrounding the AIDS epidemic.

"Italian artificial flower makers engaged in homework in New York tenement, 1908. Reformers blamed the congested conditions and long hours for high rates of morbidity from such contagious diseases as measles, scarlet fever, and tuberculosis." [From *Silent Travelers*; U.S. National Archives]

Not surprisingly, as Kraut's account shows, medicine and eventually science played important roles both in shaping and in validating such prejudices. Shifting definitions of health and disease were employed to create notions of the unhealthy "other"—in this case immigrants—silently bringing their baggage of sickness to the pristine shores of a new continent and then spreading it in an exercise of ignorance, irresponsibility, or even deception. Motivated by perception of "menaces" and preoccupied with notions of what was truly "fit" for America, public policies sought to isolate and exclude newcomers. The twin engines of fear and prejudice propelled these efforts, depicted by Kraut in vivid detail, often from the point of view of eyewitnesses.

Readers interested in the events surrounding Columbus's discovery of America and the exchange of diseases between the arriving Europeans and the Native Americans who inhabited the Caribbean islands will find a useful summary in the first chapter. Much has been written recently on the demographic collapse of indigenous American populations, a highly politicized subject concerning which estimates diverge widely. To explain this disaster, biological susceptibilities of the American natives are stressed, including their genetic uniformity and immunological incompetence. Though it is proper to highlight the biological components of the massive die-off of American natives, one must not understate the equally important social factors that helped to foster such a string of deadly epidemics. Initially, the aggressive conquerors practiced a

"A New York visiting nurse, *c.* 1900, avoiding going up and down each tenement's stairs by stepping onto a milk carton, lifting her skirt, and taking a shortcut over the rooftop." [From *Silent Travelers*; courtesy of Visiting Nurse Service of New York]

scorched-earth policy that caused widespread environmental damage and social disorganization. As has recently happened in Somalia, large numbers of displaced refugees, with severe nutritional deficits, wandered aimlessly through the countryside starving to death. To truly unravel the "web of disease" is to incorporate such factors as warfare, sanitation, and transportation into the epidemiological context.

Subsequent chapters retell the stories of 19th-century cholera epidemics and their association with Irish immigration, the health screenings of Eastern Europeans at Ellis Island in the early 20th century, and the bubonic plague in San Francisco and quarantine of its Chinatown. "Typhoid Mary" and the new threat of asymptomatic disease carriers are presented before an account of reaction to Italian immigrants, their resistance to embracing the "American way" regarding cleanliness quite noticeable during the nationwide polio epidemic of 1916. The "Jewish disease," a product of tenement life rather than an ethnically derived lack of vitality, is extensively examined together with the notorious poor working conditions to which new immigrants were subjected. Finally, Kraut depicts the encounter between American medical views and professionals and the widespread folk healing notions and practices of the various immigrant groups.

In sum, *Silent Travelers* is not only a detailed chronicle of America's unique fears and prejudices concerning immigrants and their health but a lucid analysis of the interaction of such notions with medical ideas and practices, as well as the formulation of public health policies designed to curb the importation of disease. The book succeeds admirably in depicting the cultural construction of the immigrant as both a danger to the community and a scapegoat for most of its social ills.

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Responses to Light

Light and Biological Rhythms in Man. L. WETTERBERG, Ed. Pergamon (Elsevier Science), Tarrytown, NY, 1994. xii, 448 pp., illus. $120 or £75. Wenner-Gren International Series, vol. 63.

It is said that Goethe's dying words were "More light!" This volume responds bountifully to that appeal. A compilation of papers presented at a 1992 symposium in Stockholm, it aims "to summarize the knowledge of light as a regulator of biological rhythms in man in relation to health and disease." The 32 contributions cover a vast and varied terrain, ranging from light-induced gene expression in the suprachiasmatic nuclei (Takahashi) to the influence of height, weight, sex, age, and latitude on human melatonin production (Wetterberg *et al.*) and from the treatment of peptic ulcers with pineal gland derivatives (Komarov *et al.*) to the mathematical intricacies of Type 0 versus Type 1 circadian phase resetting in humans (Kronauer and Czeisler).

The book is divided somewhat arbitrarily into five sections, the first two of which, despite the volume's title, are made up primarily of contributions describing research using non-human vertebrates. These sections provide some of the most interesting and thought-provoking chapters in the book. In addition to the excellent special lecture by Takahashi describing mechanisms of photic entrainment in mammals, Foster and Menaker raise the intriguing possibility (reprised in a later contribution by Reiter) that non-classical, non-visual photoreceptors may be instrumental in the regulation of mammalian circadian rhythms. The authors identify cell types known as Landolt's clubs as likely candidates for such photoreceptors.

Relating their findings to humans, Foster and Menaker go on to speculate that certain circadian rhythm disturbances may be the result of a genetically based lack of these circadian photoreceptors, the absence of which may not be consciously recognized by affected individuals. Such a defect might help to explain why some people have more difficulty than others synchronizing their internal clocks with the outside world—they are "time-blind." Conversely, the presence of such "unconscious," non-visual photoreceptors in the retinas of some blind individuals may account for their ability to maintain temporal synchronization, although such entrainment may be subjectively attributed to social cues.

Such hypotheses are complemented by the contribution of Brainard and colleagues, who present a thorough discussion of mechanisms that mediate therapeutic effects of light in humans. These authors point out several misconceptions regarding intensity (for example, they explain that very bright light is *not* required for melatonin suppression: under the proper circumstances, as little as 17 lux can produce statistically significant suppression) and wavelength, and they emphasize the importance of factors such as direction of gaze, pupillary dilation, retinal field exposure, and status of the ocular media in assessing therapeutic responses to light treatments.

Perhaps the most provocative issue raised in the book is that of placebo effects in light treatment. Several contributions specifically address this issue, presenting direct and indirect evidence to suggest that the therapeutic effects attributed to bright light treatment, particularly in seasonal affective disorder (SAD) and late luteal phase dysphoric disorder (LLPDD), may in large part be placebo effects. Expanding on her preliminary findings in LLPDD, and using a more adequate placebo control condition, Parry reports that "active treatments did not show incremental benefits over placebo treatments." With respect to SAD, Eastman and co-workers present results from two studies that suggest that the placebo effect may account for as much as 70 percent of the antidepressive response to morning bright light treatment. The authors emphasize, however, that these differences are not greater than those reported between many antidepressant drugs and placebo pills. In a thoughtful summary chapter in which he refers to this issue as the "placebo sword" hanging over the heads of investigators using bright light, Terman points out that there are aspects of symptomatology that correlate with treatment outcome in the absence of differential expectations. This would not be the case, he argues, if light treatment was effective only through a placebo response.

Several contributions (on sleep/wake regulation, hormone rhythms in sleep, and unmasking of temperature data) are only marginally related to the stated objective of the book and weaken its focus. In addition, the volume would have benefitted from more careful editing. For example, ultradian and infradian rhythms are misidenti-