"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-

fied in the preface, and several contributions suffer from a lack of clarity associated with inadequate English-language editing. Finally, the book suffers from the drawback of all volumes that attempt to take a snapshot of a rapidly developing field: much of the information was dated even before it was published. These points notwithstanding, the book is a useful reference volume. It provides a valuable, detailed representation of the field as of 1992.

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Other Books of Interest

No Ordinary Genius. The Illustrated Richard Feynman. CHRISTOPHER SYKES, Ed. Norton, New York, 1994. 272 pp., illus. $29.95 or $C37.50.

The Beat of a Different Drum. The Life and Science of Richard Feynman. JAGDISH MEHRA. Oxford University Press, New York, 1994. xxxii, 630 pp., illus., + plates. $35 or £25.

The tale of Richard Feynman's scientific brilliance and outlandish behavior has been well told by James Gleick (*Genius*; reviewed in *Science* **259**, 537 [1993]) and in a collection of reminiscences from the American Institute of Physics (*Most of the Good Stuff*; see *Science* **261**, 629 [1993]). Still, it is no surprise that biographers continue to recount stories from a life that followed such a colorful trajectory. Thus the collection from Christopher Sykes, a film-maker who produced several Feynman documentaries for BBC television. Whereas the AIP collection contains memories of Feynman written mostly by fellow scientists, *No Ordinary Genius* gathers testimony from a more diverse group: scientists are side by side with artists who taught Feynman drawing, a model who posed for him, musicians, and family and friends who shared his adventures. The collection is short and light and never promises more than it delivers. *The Beat of a Different Drum*, on the other hand, attempts to tackle what Gleick's book judiciously avoided: Feynman's scientific work. Mehra tries to do this while writing about what Gleick covered so well—Feynman's life and personality. Insofar as can be discerned from his citations, the author draws not at all on Gleick's biography or the AIP compilation but on interviews conducted mainly by himself. The approach is chronological, with discussions of Feynman's key papers interspersed with anecdotes about colloquia, symposia, and who said, wrote, or did what. Ultimately, the overwhelming detail gets in the way, and sometimes it is easier to follow Feynman's own writings or lecture notes prepared by others.

—David F. Voss

Vignettes: Trailblazing

When thinking, we tend to cling tenaciously to our schemata and even twist new information to conform to them. Many years ago, two physicists associated with the Aspen Center for Physics were climbing in the Maroon Bells Wilderness near Aspen, Colorado. While descending, they lost their bearings and came down on the south side of the mountains, instead of the north side near Aspen. They looked below them and saw what they identified as Crater Lake, which they would have spotted from the trail leading home. One of them remarked, however, that there was a dock on the lake, which Crater Lake does not possess. The other physicist replied, "They must have built it since we left this morning." . . . It took them a couple of days to get home.

—*Murray Gell-Mann*, in *The Quark and the Jaguar: Adventures in the Simple and the Complex* (Freeman)

I'm convinced that a controlled disrespect for authority is essential to a scientist. All the good experimental physicists I have known have had an intense curiosity that no Keep Out sign could mute. Physicists do, of course, show a healthy respect for High Voltage, Radiation, and Liquid Hydrogen signs. They are not reckless. I can think of only six who have been killed on the job.

—*Luis Alvarez*, in *Adventures of a Physicist* (Basic Books)

Einstein Lived Here. ABRAHAM PAIS. Oxford University Press, New York, 1994. xviii, 282 pp., illus. $25 or £14.95.

In 1982, under the title *Subtle Is the Lord*, Abraham Pais published a well-received "life and work" of Albert Einstein (reviewed in *Science* **218**, 989 [1982]). Since that time the Einstein literature has been substantially increased by the appearance of three of the projected volumes of his collected papers from Princeton University Press, and on the personal side revelations of those papers and other documents have recently been expounded by Roger Highfield and Paul Carter in *The Private Lives of Albert Einstein* (reviewed in *Science* **263**, 997 [1994]). In the present work Pais presents as a complement to his own earlier work a collection of essays on the way Einstein was perceived "by the outside world of non-scientists." The book opens with a summary of what is now known about Einstein's marriages and children and proceeds to a series of brief essays (several of which are reprinted from *Subtle Is the Lord* or other sources) covering among other topics connections between Einstein's thought in physics and that of Bohr and De Broglie, Einstein's Nobel award, and the qualities of his secretary, Helen Dukas. One chapter presents selections from Einstein's *komische Mappe*, or collection of eccentric correspondence, and others consider his interactions with Rabindranath Tagore and Mohandas Gandhi and his views on religion and philosophy. The last and longest (138 pages) section of the book is devoted to "Einstein and the press." Here the author reprints or describes and comments on clippings he has gleaned from Einstein archives and newspaper indexes, beginning with Einstein's own first advertisement for private pupils in 1902 and extending to materials about him generated by the 1979 centennial of his birth.

—Katherine Livingston

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Books Received

AIDS Epidemiology. A Quantitative Approach. Ron Brookmeyer and Mitchell H. Gail. Oxford University Press, New York, 1994. xvi, 354 pp., illus. $49.95. Monographs in Epidemiology and Biostatistics, 22.

Algebraic Graph Theory. Norman Biggs. 2nd ed. Cambridge University Press, New York, 1994. viii, 205 pp., illus. Paper, $22.95.

Alzheimer's Disease. Advances in Clinical and Basic Research. Benedetto Corain *et al.*, Eds. Wiley, New York, 1994. xvi, 633 pp., illus. $250. From a conference, Padova, Italy, July 1992.

American Ground Zero. The Secret Nuclear War. Carole Gallagher. Random House, New York, 1994. xxxiv, 365 pp., illus. Paper, $30. Reprint, 1993 ed.

Amphetamine and Its Analogs. Psychopharma-