May Be Hazardous to Your Health

BY DAVID L. HOWELL*

David S. Barnes. *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs*. Baltimore: Johns Hopkins University Press, 2006. xi + 314 pp., illus., maps, index. ISBN: 978-0-801-88349-1. $35.00 (cloth).

Linda Nash. *Inescapable Ecologies: Environment, Disease, and Culture in the History of California.* Berkeley and Los Angeles: University of California Press, 2006. xiv + 332 pp., illus., maps, index. ISBN: 978-0-520-24887-8. $26.95 (paper).

Brett L. Walker. *Toxic Archipelago: A History of Industrial Disease in Japan*. Foreword by William Cronon. Seattle: University of Washington Press, 2010. xviii + 284 pp., illus., maps, index. ISBN: 978-0-295-98954-9. $35.00 (cloth).

This is going to be something of a Goldilocks story. Once upon a time there were three books about people getting sick—or at least worrying about getting sick—from invisible substances in the environment. One book was a history of public health, one an environmental history, and one something in between. One book generally eschewed speculation about what was "really" wrong with people, one favored scientific understandings over indigenous ones, and one was something in between. All were intellectually toothsome, but to this reader, the marriage of environmental and public health history in Linda Nash's *Inescapable Ecologies: Environment, Disease, and Culture in the History of California* was just right. Let us consider them in turn.

The eponymous stink that begins and ends David Barnes's *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs* overwhelmed the French capital one summer, and then returned fifteen summers later. No one can say for sure what caused the smell or even precisely what it

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was, but if it was not human excrement it was certainly something redolent of it. In any case, it was pretty bad.[1] The first time around, in 1880, the stink excited widespread concern, anger, and even panic among the residents of the city, who feared it signaled the spread of a disease-bearing miasma. Journalists and politicians insisted (quite incorrectly, it turns out) that empirical evidence clearly pointed to a serious health crisis; in particular, they argued, infant mortality spiked to an unprecedentedly high level during the worst of the fetid episodes. Even Louis Pasteur—by this time a national hero as well as France's best-known advocate of the bacteriological view of disease—allowed for the possibility that the stench carried pathogens.[2]

In contrast, by the time of the second outbreak in 1895, people were happy to complain about the stink but did not evince any concern that it might kill them. No, they had not overcome the fear that their surroundings contained substances that might cause disease. Rather, they had acquired a new understanding of the invisible sources of pathogens. They learned that "not everything that stinks kills, and not everything that kills stinks" (it's even catchier in French: "tout ce qui pue ne tue pas, et tout ce qui tue ne pue pas") (37), which helped them look beyond unpleasant smells as evidence of deadly emanations and embrace the notion that the world around them teemed with invisible microbial life, including some that might harm them. A scary prospect, but they learned to battle harmful germs, as we do ourselves today, by keeping their bodies and surroundings clean. Good-bye miasmas, hello Purell.

In less than a generation, Barnes demonstrates in this intelligent and beautifully argued book, a new consensus had emerged on the causes and mechanisms of disease. He calls it the "sanitary-bacteriological synthesis"—SBS for short—and it largely displaced earlier miasmatic theories of disease causation. Reduced to the briefest and crudest of sound bites, the book seems simply to tell a version of the familiar tale of now discredited theories falling in the face of the Bacteriological Revolution. But the book is in fact quite different from the old "superstition out, science in" story we all grew up with. Microbes did not supplant miasmas easily or smoothly. Indeed, the new synthesis cannot even be characterized simply as the triumph of new ideas over old ones. Instead,

1. As Barnes notes (243–44), Paris was not the only place to suffer from a Great Stink: London smelled bad in 1858. See Stephen Halliday, *The Great Stink of London: Sir Joseph Bazalgette and the Cleansing of the Victorian Metropolis* (Stroud, England: Alan Sutton Publishing, 1999), which focuses on the engineer Joseph Bazalgette's remaking of London's sewer system.

2. On Pasteur's career, see Gerald L. Geison, *The Private Science of Louis Pasteur* (Princeton, NJ: Princeton University Press, 1996).

it was the product of a process in which elements of old notions of disease causation were assimilated into a theory centered on microbes as the ultimate source of disease. Those elements—sanitarian ideas about the importance of clean bodies and clean air—were integral to the synthesis that continues to govern our understanding of disease. As Barnes puts it, "Miasmas and geology no longer caused disease at century's end; microbes and their contagious transmission had taken their place. But contamination by unclean bodily or organic substances still lay at the root of most epidemics, and transgressions against cultural norms remained highly pathogenic. . . . Old truths were true for new reasons, and new discoveries were adapted to fit old explanations" (139).

The mix of the familiar and the new was indeed key to the success of the SBS, for it helped to win over those many observers who acknowledged the existence of microbes but were slow to be convinced that these entities actually made people sick. Sanitarians "feared a focus on microbes might divert attention and energy from fighting the 'tangible' and 'suppressible' causes of disease," such as overcrowding and filth. "Their efforts to minimize the importance of germs were doomed to failure, but their defense of old-fashioned values—in essence, cleanliness and the ideal of bodily separation and aeration—proved too strong to ignore. Future etiologies would somehow have to continue to incorporate tangible causes, even as they turned toward the laboratory for the identification of new culprits" (121–22). The history of the SBS is, in short, the history of our contemporary commonsensical understanding of disease and prevention: the price of health is eternal vigilance—at least in control of the environment.

Brett Walker's *Toxic Archipelago: A History of Industrial Disease in Japan* examines a series of environmental crises in Japan, only some of which resulted in the industrial diseases of the book's subtitle. It ranges widely across two and a half centuries of Japanese history, touching on topics as varied as the use of whale oil as an insecticide in the eighteenth century and the causes and consequences of the Hōjō Colliery explosion of 1914, which ranks among the deadliest coal-mining accidents in world history. Walker's approach is unabashedly declensionist (xviii); even the "hopeful note" on which he ends is a dark series of negative statements about the "grim future" that awaits us all—the only hope he can salvage is that, "as we experience environmental collapse, we will witness moments of sublime beauty," as doomed people and animals demonstrate "selfless compassion" (223–24).[3]

3. Walker's declensionist stance is hardly unusual among environmental historians. "Is there not in fact *one* great and very simple leitmotif that runs through environmental history from the

Two of the book's six chapters revisit pollution cases already covered by monograph-length studies in English. One concerns the career of Tanaka Shōzō, who became modern Japan's first environmental activist when he led a protest in the 1890s against the Ashio copper mine and the devastation its runoff wreaked on nearby farms.[4] The other explores the nature of suffering among the victims of methyl mercury poisoning, known as Minamata disease, in the 1950s and 1960s. Minamata disease is the subject of Timothy George's excellent study of the poisoning's effects and its victims' decades-long struggle to bring to account Chisso, the company whose chemical plant dumped mercury into Minamata Bay and thereby caused the disease.[5] Other chapters detail incidents that have not been analyzed at length before in English, including "it hurts, it hurts" disease (*itai itai byō*), a notorious cadmium poisoning case that afflicted farmers living near the Kamioka zinc and lead mine in the 1940s and 1950s.

Walker's style in *Toxic Archipelago* is deliberately unorthodox. He quotes—twice (20, 138)—a study of Hmong storytellers, who "speak of all kinds of things"—that is, tell apparently meandering tales that in fact underscore the connections between seemingly disparate things.[6] Walker's idea seems to be to embed environmental tragedies in historical and cultural contexts beyond the specific stories of industrial development gone wrong. When it works, the method very effectively evokes the hybrid causes of environmental crises. For example, vitamin D, whether from diet or the sun, mitigates the effects of cadmium. Since traditional Japanese diets tended to be poor in vitamin D, sunshine was a vital source of the nutrient. Unfortunately, women living near the Kamioka mine—like other rural women throughout the country—shielded themselves from exposure to the sun during farm work, which left them much more susceptible than men to *itai itai byō*. Although Walker missteps—twice

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beginning of agriculture—namely, the inexorable decline of nature as it is increasingly subjugated by humanity? . . . [E]nvironmental history is the history of a fall from grace and its unending consequences." Joachim Radkau, *Nature and Power: A Global History of the Environment*, trans. Thomas Dunlap (Washington, DC: German Historical Institute; and New York: Cambridge University Press, 2008), 11.

4. See Kenneth Strong, *Ox Against the Storm: A Biography of Tanaka Shōzō, Japan's Conservationist Pioneer* (Vancouver: University of British Columbia Press, 1977).

5. Timothy S. George, *Minamata: Pollution and the Struggle for Democracy in Postwar Japan* (Cambridge, MA: Harvard University Asia Center, 2001).

6. Walker cites Anne Fadiman, *The Spirit Catches You and You Fall Down: A Hmong Child, Her American Doctors, and the Collision of Two Cultures* (New York: Farrar, Straus and Giroux, 1997).

(128, 130)—in characterizing the women's aversion to tanned skin as evidence of "imperial ethnographies of skin complexion" (the Japanese preference for pale skin antedates their encounter with Western notions of race and empire), his excursion into culture helps to explain why ninety percent or more of the victims of "it hurts, it hurts" disease were women.

When Walker's method does not work, the narrative loses its focus. Thus, in his brief discussion (34–38) of mosquitoes as the vector for the spread of Japanese B encephalitis, he flits from a personal recollection of watching crows while camping in Hokkaido, to an allusion to a fourteenth-century literary classic, to the career of the Orientalist Lafcadio Hearn (1850–1904), to a quick word on Buddhist ideas about the transmigration of souls, to a description of Buddhist graveyard architecture, to a brief history of suburban piggeries, and finally to the man who facilitated discovery of the Japanese B encephalitis virus and his later, sinister career in biological warfare during World War II—all while leaving room for a half-page-long table of encephalitis statistics.

Judging the success or failure of Walker's Hmong-inspired narrative style ultimately comes down to a matter of personal taste, but in any event he should be commended for breaking out of the conventional monographic mold. Although his intended audience seems to be readers of environmental history in general rather than historians of Japan in particular, his approach to hybrid causality is particularly valuable in the Japanese context, where studies of environmental history are still rare—and histories of science rarer still—and the fruits of both fields of inquiry are poorly integrated into the historical literature. His story of environmental declension is all the more troubling for its insistence that the "toxic archipelago" cannot be blamed entirely on modern industrial development: the tendrils of hybrid causality extend through culture and society, implicating us all whether we realize it or not.

The tenor of Walker's study is universal, yet the book is quite specific in its focus on Japan as a "toxic archipelago." It never claims a privileged place for the environmental history of Japan in our understanding of universal processes of environmental degradation and industrial disease; rather, Japan provides a discrete field in which to invoke culture as an actor in the process of hybrid causality. Walker does not attribute Japan's environmental problems to a pathology of Japanese culture per se, or—in a tack once common in Japanese studies—to an imperfectly modernized political culture.[7] Rather, his argument

7. For a particularly cranky denunciation of Japanese political culture, see Karel van Wolferen, *The Enigma of Japanese Power: People and Politics in a Stateless Nation* (New York: A. A. Knopf, 1989).

comes down to something more like cultural caprice: the Japanese just happen to be Buddhists, who just happen to place open cisterns at temples, which just happen to provide an excellent breeding environment for mosquitoes, which just happen to be the vectors of Japanese B encephalitis. None of this is anyone's "fault," but cultural factors contribute to environmental problems in ways that deserve just as much attention as the obvious, sometimes downright criminal actions of polluters like the Chisso Corporation. Walker discusses Japan because that is the case he knows best, but similar histories of toxicity could be written anywhere insofar as all environmental problems are the result of similar—if individually unique—patterns of hybrid causality.

In *Inescapable Ecologies*, Linda Nash investigates the environmental and public health history of the Central Valley of California, a landscape that humans have transformed as profoundly as any over the past two centuries. Settlers took a "wilderness" and turned it into an extremely productive but heavily engineered terrain of industrialized agricultural production. The book is effectively a narrative of the loss and recovery of the realization that bodies—in sickness and in health—exist in specific environments. As Nash phrases it, "My question is not why and how the link between environment and health was finally recognized in the late twentieth century but why it had ever become invisible. From this perspective, the narrow situating of disease in the organic dysfunction of bodies and particular pathogens begins to look like a brief period of modernist amnesia" (6).

The first wave of Euro-American settlers accepted as a matter of common sense the close relationship between health and environment. Some places were salubrious and others were not, but in any case landscapes did not equally affect all who passed through them. Whites considered themselves to be particularly sensitive to gradations in the terrain: although Indians may have thrived for centuries in the intense summer heat of the Central Valley, settlers of European stock seemed to be susceptible to malarial fevers and other debilitating ailments brought on by the land's miasmatic emanations. Even as they attributed health problems among whites to the environment, however, sanitarians blamed Chinese and other nonwhite residents for their own health problems, seeing their neighborhoods as "the source of 'miasmatic effluvia' that wafted into unsuspecting white bodies" (69).[8] In the last third of the nineteenth century,

8. Nonwhites and their disturbing effluvia, this time in the colonial Philippines, are the subject of Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham, NC: Duke University Press, 2006).

"improvements in health—such as a decrease in the death rate or the continued absence of diseases like smallpox and cholera—were always read as evidence that white occupation was improving the quality of the land" (73).

As in Barnes's Paris, physicians in nineteenth-century California mixed and matched sanitarian and bacteriological ideas without hesitation, but remained secure in their conviction that health and physical environment were closely tied together. By the early twentieth century, however, they had come to view the human body as a closed system. To be sure, people remained vulnerable to the effects of microbial pathogens introduced into their bodies from the outside, but they were generally impervious to the environment per se. Although Nash does not explain precisely what she means by the closing of the human body—according to the SBS, we are never fully isolated from our surroundings—Californians presumably learned as well as Parisians did to wash their hands after peeing. In any event, the old view of illness and health as a response to the physical environment was discarded. Eventually it came back, when, in the late twentieth century, whole communities were stricken with afflictions ranging from nausea to cancer linked to the lingering effects of powerful and highly toxic pesticides. Sorting out the sources and nature of the diseases in the toxic valley was a process fraught with controversy and indeed remains bitterly contested even today.[9] In the meantime, residents of the Central Valley are sickened by actual miasmas—fogs laden with the odorless residue of pesticides. "Tout ce qui pue. . . ," indeed.

Medical geography—the study of the connection between place and disease—was central to sanitarian understandings of the landscape in nineteenth-century California, just as it had been in France. Barnes traces the demise of the idea that each locale had its own particular make-up—terrain, weather patterns, and the like—that explained (and hence might even be predictive of) disease patterns. By the early 1880s, the gripes of a few true believers that reports on epidemics no longer included meteorological information reflected medical geography's fall from favor. The discipline survived longer in California—the

9. For an ethnographic account of an urban landscape gone toxic thanks to manmade miasmas, see Peter Wynn Kirby, *Troubled Natures: Waste, Environment, Japan* (Honolulu: University of Hawai'i Press, 2011), which discusses Suginami disease (Kirby calls it Azuma disease), a mysterious ailment that afflicted some but not all residents of a Tokyo neighborhood under which a waste transfer station had been built. Like the residents of the cancer clusters Nash discusses, sufferers of Suginami disease had to fight for years to get government officials just to acknowledge that something was wrong. Most of those afflicted with Suginami disease were women, as were the victims of sick building syndrome in the United States in the late twentieth century. See Michelle Murphy, *Sick Building Syndrome and the Problem of Uncertainty: Environmental Politics, Technoscience, and Women Workers* (Durham, NC: Duke University Press, 2006).

landscape itself was not as familiar to American observers, after all—but there too it disappeared during the decades of "modernist amnesia." Eventually it was revived, Nash argues, when scientists realized that substances in the physical environment—pesticides applied weeks earlier and miles away, blended in nature into highly toxic compounds—could cause disease even in the absence of obvious signs of contamination.

A key difference between Barnes's study of France and Nash's analysis of California is that, in France, the sanitary-bacteriological synthesis developed in a static physical environment. The Parisian landscape in which the physicians, public health officials, and others on the front lines of the fight against disease worked remained stable as they undertook the labor of reconciling sanitarian ideas with the increasingly compelling evidence for germ theory. To be sure, their understanding of the relationship between disease and environment changed, but they did not have to contend with the radical changes in waterways, crops, and demography that faced their counterparts in California, who had to make sense of a constantly changing target. Moreover, as Nash puts it, "not only did the environment affect health; ideas about health and disease sometimes shaped landscapes in quite material ways" (51). Immigrants, attracted to the Central Valley's obvious suitability to agriculture, struggled to overcome their conviction that the region was the most insalubrious in all of California.

Nash succeeds in harnessing the strengths of an approach like Barnes's study of public health in the service of an environmental history of the Central Valley of California. Barnes, with his tighter focus and richer sources, writes with a degree of nuance that Nash cannot match. But it is certainly a worthwhile tradeoff if one reads *Inescapable Ecologies* as a history of public health in which the landscape itself is a full actor. The book's chronological sweep rivals that of Walker's *Toxic Archipelago*, while its clearly delimited geographical focus allows Nash to construct a narrative in which all the diseases that afflicted people in the Central Valley—from the malaria of the first immigrants to the cancers of recent decades—are clearly sited in a single (if changing) landscape.

To be sure, some readers of *Inescapable Ecologies* will miss the doomsday vibe of Walker's and many other environmental histories, for Nash is unsentimental in her description of the Central Valley's transformation from wilderness to agroindustrial deathtrap. But even such readers, as much as they value the creativity of *Toxic Archipelago*'s declensionist argument, will appreciate Nash's thorough integration of the environment into the history of the body. Where Walker offers us a clever but disorienting *amuse-bouche* platter, Nash serves up the stick-to-your-ribs goodness of a hearty bowl of porridge.