

Book Reviews

David Arnold, *Toxic Histories: Poison and Pollution in Modern India*, Cambridge: Cambridge University Press, 2016. Pp. 250. \$49.99 cloth (ISBN 9781107126978).

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David Arnold has written a masterful history of poisoning and pollution in India since the eighteenth century. It is impressive in several ways. First, *Toxic Histories* has great breadth. Arnold weaves together the history of purity and pollution in a ritual or religious sense, the history of poison in a toxicological sense, and the history of pollution in an environmental sense. To do so in a book of just over 200 pages is a true achievement, and the result is panoramic. It also requires discipline. In clear and efficient prose, the author maintains balance between the details of particular episodes grounded in meticulous archival work, on the one hand, and rich conceptual analysis, on the other, and even at his most abstract, Arnold never lets vagueness masquerade as profundity.

The study's breadth does come at a price. Although huge amounts of research clearly went into this book, the author only scratches the surface of vast collections such as the annual reports of the chemical examiners or the legal documentation associated with the Bhopal disaster of 1984. And yet a choice has been made, and the result is a short and very readable work that draws together the history of law, crime, forensic science, toxicology, pharmacy, bacteriology, epidemiology, tropical medicine, public health, food, animals, labor, sanitation, environmentalism, and the city (particularly Calcutta, with an honorable mention for Bombay).

If the book's breadth is its first major contribution, its second is its attention to change over time. *Toxic Histories* is full of original insights on how institutions, fields of knowledge, and public discourses shifted between the eighteenth century and the late twentieth. In the nineteenth century, people in India were largely focused on forensic science and crimes committed by individuals—"datura *thugi*, arsenic murders, cattle poisoning" (174). By the twentieth, however, the fear of criminal poisoning by individuals became dwarfed by the fear of being poisoned by a toxic environment, from contaminated milk and adulterated cooking oil to the air pollution produced by mills, railways, and steamships. The shift from individual criminal intent to corporate

indifference leaves the reader feeling more unsettled by the book's environmental end than at its forensic middle.

The introduction sets up key themes, including how poison culture became "politicized and polemized under British rule" (3); and how Indian players like Chunilal Bose, Ram Nath Chopra, and Calcutta's social elites were central to the development of colonial institutions and public debates alike. Chapter 1, "The social life of poisons," offers an overview of non-colonial poison-related knowledge traditions, both elite and non-elite, that were used in medicine, aphrodisiacs, and crime in South Asia. It would make excellent undergraduate reading for a course on the history of crime, science, or medicine. In Chapter 2, "The imperial *pharmakon*," Arnold explores East India Company-era toxicology, a new field that focused on Indian botanical substances such as aconite, datura, and opium. (In Europe, toxicology focused on mineral poisons.) We meet William Brooke O'Shaughnessy, the Irish assistant surgeon who became India's pioneering chemical examiner in the 1840s. Chapter 3 is about "poison panics," including the nineteenth-century obsession with *thugs* and their use of poison in highway robbery along with the "princely poisoner" figure reflected in allegations at the royal court of Baroda (1874). Chapter 4 ("Toxic evidence") creates an institutional portrait of the chemical examiners, the colonial state's toxicological experts, and introduces the reader to key figures in the history of Indian medical jurisprudence, notably treatise author Norman Chevers. Chapter 5, "Intimate histories," investigates some of the most famous "poison stories" of the nineteenth century. Particularly gripping is the Agra double poisoning case (1912–13) in which a mixed-race physician and his English mistress poisoned their spouses and wrote about it in their love letters. Chapter 6, "Embracing toxicity" tells the story of India's 1904 Arsenic Act, following England's legislation a half-century earlier. Arsenic—lacking smell, taste, or color—was the leading poison for murder worldwide in the nineteenth century. Finally, Chapter 7 is the book's main contribution to environmental history. "Polluted places, poisoned lives" explores the rising public awareness of adulterated food and drink, polluted air and water, and dangerous industrial work conditions during the twentieth century. The book ends with the Bhopal disaster of 1984. Arnold contextualizes the world's worst industrial accident within the developmental state's quest to increase agricultural production and quell malaria through use of pesticides such as DDT.

Fear and danger hang over the book like a Bhopal cloud of methyl isocyanate. Much less is written, however, about their more plodding partners: risk management and compensation for harm. How did the history of insurance, poison, and pollution overlap in colonial India, for example? In Britain, the early history of life insurance (and of working-class "burial clubs") was closely connected to the crime of poisoning. People purchased insurance policies on others' lives, poisoned them, and then blamed the deaths on illness in order to

collect on the policies. Arsenic poisoning and cholera were hard to tell apart. During the nineteenth and early twentieth centuries, the life insurance industry in the imperial metropole worked hard to shake the association between its product and poison murders. Was there a similar story in India? Insurance of many kinds was being sold in India's urban centers by 1900. What role did poisoning play? Equally, how did particular forms of insurance develop to spread the loss in the case of accidents relating to poison or pollution? By the 1920s, large employers in India were purchasing accident insurance, for example. And what forms of noncommercial "insurance" existed, in the form of support from family or religious or community bodies, when chemical catastrophe struck? *Toxic Histories* says little about these issues.

The hazardous workplace is especially relevant here. Industrial poisoning and pollution are major themes of the last chapter of Arnold's book. Worker's compensation was set up in India in 1923, and a rich archive of annual reports detail its development in the decades that followed. What kinds of incentives (and disincentives) did this system create for participants in chemically hazardous activities? How did it intersect with accident insurance? Arnold notes government regulation (or the lack thereof) generally, but these particular mechanisms go unmentioned.

The key point is that there were systematic attempts—other than scientific ones—to manage risk and compensation for harm. Rather than relying on the law of negligence to compensate victims of chemical disasters, for example, the twentieth-century Indian state developed a system of *ex gratia* payments for victims of accidents. How did this system emerge? How did it shape the way corporations and other actors approached hazardous activities? The book explores the law of nuisance in urban pollution cases, and there is a brief section on litigation (191–92), but more could have been said about other ways in which accidents were handled.

The management of risk and compensation are important pieces of India's toxic histories, and ones that would have enriched this study. Even without them, however, Arnold's book is breathtaking in its reach, riveting in its stories, and elegant in its prose. If readers did not have what Lawrence Buell calls "fear of a poisoned world" before reading this book, they will feel it after. And yet, they will recognize that "poison was also opportunity" (210). India's toxic crimes and disasters were closely connected to the rise of key institutions, social movements, medical treatments, and disease control. A final achievement of Arnold's book is, therefore, that it captures the inseparability of the pernicious from the productive in India's toxic histories.

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