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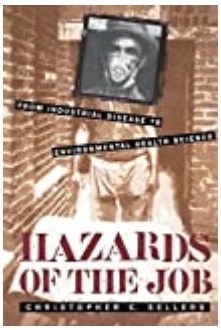

Christopher Sellers. *Hazards of the Job: From Industrial Disease to Environmental Health Science.* Chapel Hill: University of North Carolina Press, 1997. xv + 331 pp. $45.00 (cloth), ISBN 978-0-8078-2314-9.

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This is a complex, thoughtful, and meticulously researched history of thought about occupational disease in the first half of this century that is based upon a wide reading of the archival, primary printed, and secondary literature. Although not an economic history, the work will interest economists and anyone else anyone concerned with the evolution of the American workplace during these years.

Sellers begins with a prologue informing us that he intends to recover "this biological dimension to the workplace's past" (p. 4), and then goes on to ground postwar environmentalism in the earlier industrial hygiene movement. There follows a chapter on the discovery of lead and other industrial poisoning in Europe and its comparative neglect in the United States until the early years of this century. Sellers occasionally provides glimpses of how nineteenth century labor markets dealt with well-known toxins–fewer than fifteen percent of workers at one lead-using firm stayed more than forty-eight weeks, and the foreman would encourage those showing poisoning symptoms to leave. Managers, he argues, were largely unaware of the extent of such disease–a rational result, perhaps, of the low payoff to such information. Two chapters then trace the rising concern with occupational health to the rise of militant labor and to legal changes such as Holden vs Hardy- which seems implausible as states had been regulating health and safety for decades. The industrial hygiene movement begins with the revelations of phosphorus and lead poisoning by the American Association for Labor Legislation and Alice Hamilton, and the more formal investigations by the Public Health Service (PHS). Themes include the development and meaning of expertise and the ability of researchers such as Hamilton to wield "disciplinary power" to encourage business compliance with researchers' prescriptions.

Chapters Four and Five continue these themes, tracing the complex relations between scientists and the business community, the problems with identifying occupational diseases, and the origins of a laboratory-based study of occupational disease at such institutions as Harvard's School of Public Health. Here again, Sellers argues that while company concerns often shaped research agendas and publications, researchers were still able to exploit the need of corporations for disinterested expertise to carve out both independence and disciplinary power. Chapter Six briefly discusses some of the occupational health studies of the 1930s and notes the increasing interest in toxicology of large companies such as DuPont and GM but says little on what stimulated this interest or what results it had. In the remainder of that chapter, the focus turns to the non-work environment. Sellers re-

counts a PHS study of environmental lead exposures to apple workers and consumers that revealed the difficulties of applying outside the workplace those techniques that relied on clinical findings of disease. The conclusion links modern environmentalism to the earlier hygiene studies. The author claims that the modern overemphasis on synthetic industrial chemicals is a legacy of the industrial hygiene movement, and he unfavorably contrasts EPA-OSHA regulation with the earlier, more flexible approach, which he compares to right-to-know laws.

I want to raise two issues that relate to coverage and evidence. This is a history of the development of scientific thought about occupational disease. It is not, as the title suggests, a history of hazards of the job if by that is meant a reasonably comprehensive assessment of the extent of industrial disease, nor, as the author makes clear in the preface, is it a comprehensive history of industrial hygiene. This emphasis on scientific thought means we learn much less about business and labor leaders' motives than about those of scientists. Similarly, the coverage of hazards and regulatory efforts is spotty–there is little on silicosis, byssinosis, black lung, and asbestos-related disease, perhaps because their study did little to advance the science of occupational medicine. The increasing coverage of occupational disease by workers' compensation laws is noted but not discussed in any depth. Nor do we come away with any sense of what worked: Sellers informs us that in 1910-1911 Illinois tightened regulations on lead, arsenic, and brass industries, but the book does not discuss whether or not the new rules had any effect.

No one should be criticized for failing to write a different book, and the above is not intended as criticism, but merely to clarify the book's scope. But one aspect of coverage does affect the author's argument. Of the broad themes Sellers advances, perhaps the most interesting to economists is the power he ascribes to informal, expert-based authority in shaping employer behavior. Early company efforts to reduce lead exposures were probably not cost-effective, Sellers argues, but were done for moral reasons or public relations, and he claims that "for [Alice] Hamilton, the investigative enterprise became a regulatory act" (p. 73). Later he asserts the "surprising effectiveness of this new professional form of authority," and claims that it "exerted a new discipline over a growing number of employers" (p. 180). Yet three pages later we are told "preventive measures [urged by Harvard's School of Public Health] had little impact on industrial processes" (p. 183). In fact the evidence on these issues is exceedingly weak. Thus, there is little about the prevalence of even such a well-studied disease as lead poisoning, or about whether occupational diseases were reduced by the industrial hygienists' efforts. Occasionally there are generalizations about the extent of occupational disease such as "Barnes shared this kind of dilemma [the need to accept an unhealthy job during the Depression] with tens if not hundreds of thousands of others" (p. 189). But the source for this claim turns out to be four letters written by workers, two of which date from the 1940s.

While it is easy to nit-pick any book, there are number of places in addition to the above where the author's interpretation outruns his evidence. Occasionally causation is either obliquely asserted or presented without much evidence. For example, Sellers asserts (p. 133) that "By raising his wariness of patient testimony to such an extreme, Schereschewsky forestalled the employer and professional criticisms endured by Hamilton: no one could accuse him of falling prey to garment workers' exaggeration of their ills." It is not clear whether this is simply a statement of behavior or an attempt to imply motive as well. Or consider the following problematic attempt to infer motive. Apparently the author found few photographs of physicians with workers and so a picture of a doctor reading physical examinations is captioned "Hardly ever did industrial hygiene researchers *allow themselves* [my emphasis] to be photographed with worker subjects; they preferred to be seen at their desks, with emblems of their science ..." Of course the absence of photographs reveals nothing about the cause of that absence.

Finally, although it may seem inappropriate for an economist to comment on anyone else's prose, Sellers' book is not an easy read. There are too many sentences such as: "To tell this tale is thus to foreground the centrality and importance to twentieth-century workplace history of knowledge claims themselves–in this case, the conflicting representations of environmental biology" (p. 8). Or consider this assessment of middle-class reformers: "We may understand their discipline as a major symbolic achievement: like the Protestant ethic whose Weberian reading Jean-Christophe Agnew has lately recast, 'not simply an economic strategy' for controlling both workers and employers, but a 'cultural strategy for ordering a mass of meanings' incited by market-driven workplace change" (p. 230).

Despite such difficulties this remains a valuable book. It reveals a role for science in shaping production technologies that economists have largely overlooked and a linkage between industrial hygiene and environmentalism that has gone largely unnoticed. It will be the

definitive treatment of the early evolution of industrial medicine and an invaluable source on the origins of health and safety regulation.

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