

Paul-André Rosental (ed.). *Silicosis: A World History*. Baltimore: Johns Hopkins University Press, 2017; 296 pp., notes, bib., contributor bios., ind., cloth, \$49.95. ISBN: 9781421421551

Silicosis is a collaborative effort of two physicians and nine historians from eight European countries, Australia, and the United States. Additionally, Bernard Thomann, a French historian, contributes from his three-year experience as an academic in Japan. This multi-national representation provides knowledge and perspectives to an extent not otherwise easily available in English-language publications.

Unfortunately, the introductory chapter contains inaccuracies and ambiguities which may not be apparent to the uninitiated reader. The author correctly states that silicosis is induced by the inhalation of free crystalline silica, but goes on to say that “silica is the main component of the earth’s crust.” This is an acceptable statement only insofar as it does not imply that silica is an actual mineral but, rather, that it is an expression of the fact that silica and oxygen are the two most abundant elements in the earth’s crust. But the specific mineral, silica, almost entirely quartz, the cause of silicosis, comprises only about 12 percent of the earth’s crust, hardly the most common mineral. This is confusing, and the composition of the earth’s crust is irrelevant to a discussion of silicosis.

More ambiguity appears: “[Silicosis] has been the most lethal occupational disease in history.” This is, of course, incorrect, as many cases of simple nodular silicosis show no functional impairment and are compatible with a normal life expectancy. The actual most lethal occupational diseases include hepatic angiosarcoma of the liver (vinyl chloride monomer) and pulmonary mesothelioma (asbestos). The author may have intended to say that over the course of history, silicosis has been the leading cause of death among occupational diseases.

Also, Bernardino Ramazzini published his fa-

mous text in 1713, not 1700. Dental prosthodontists are not affected by silicosis, but dental technicians are at risk. There are other problems and peculiar expressions: sandblasting is described as a “concentrated sand squirt,” and mine shafts are “wells.”

However, the reader who puts aside his doubts about the worth of this volume and perseveres, continuing to the second chapter and beyond, will be richly rewarded, although errors continue to appear and critical reading is essential. Silicosis does not occur when “fine particles of quartz [have] silted up the drainage channels” of the lungs, and silicotic nodules are not “congealed lumps of grit,” nor are they concentrated in the “lining of [the] respiratory organ.” Lung cancer in uranium miners is not caused by “radiation from uranium,” but, rather, by the inhalation and deposition of radon daughters.

A principal topic of this book is the evolution of monetary compensation systems for silicosis arising out of employment, and workers’ struggle for appropriate relief in a social and economic environment clearly weighted in favor of the ruling classes. It was early recognized that social security or insurance for silicosis absolved the employer of responsibility and shifted the burden to the community at large.

Consequently, systems of workers’ compensation, funded by employers and designed to provide medical care and monetary relief for work-related diseases, were developed. But there was (and is) obvious conflict between the dominant industrial employer, not known for altruism, and workers, represented with varying degrees of effectiveness by unions.

Is tuberculosis, commonly associated with silicosis, a “personal” disease (social insurance) or an occupational disease (workers’ compensation)? Is an award made for reduced ability to work or for the existence of an anatomical deviation from normal? Is silicosis on an official list of the only compensable conditions recognized by the state?

Silicosis examines the evolution of disparate

systems in great detail. In general, the systems contrast with American plans, specific to each state and usually based upon either wage loss or the use of a published impairment rating not related to ability to work, i.e., “impairment” and “disability” are clearly distinguished.

The subject of native Africans working in South African gold mines merits an entire volume, but *Silicosis* does a thorough job. It details the exploitation and inferior treatment of blacks in every phase of the mining enterprise, from recruitment to repatriation. In contrast to whites (mostly Dutch-descended Afrikaners and Cornishmen), black laborers had inferior wages, assignments to the most physically demanding and dusty jobs, poor living arrangements, and marginal medical care and compensation for injury or disease.

The effectiveness of medical surveillance and care can only be imagined when one “kafir” doctor examined three hundred to twelve hundred black miners each day with no records and rarely chest x-rays. The white miner with lung disease was treated in a sanitarium; the disabled African miner was repatriated to his village of origin, usually to die and often in other countries such as Mozambique or Nyasaland (Malawi). And sick with tuberculosis, the repatriate often served as a vector of endemic disease, over the long term destroying village social and economic structures. It is probable that this social disruption has contributed to the prevalence of AIDS now seen in southern Africa.

Silicosis recognizes and discusses in detail the pivotal role of the Johannesburg International Silicosis Conference of 1930, financed primarily by the Transvaal Chamber of Mines, well aware that gold mining was the primary source of national revenue. A carefully selected body of experts from around the world gathered to formulate a legal and medical definition of the disease, to examine its causes and prevention, and to consider the sourcing and awarding of financial compensation. The chamber recognized that publicizing the safe-

ty of mining was essential to worker recruitment, and that efficient mining depended upon maintaining for as long as possible the fitness and productivity of miners. Also discussed was the extent to which the burden of compensation encouraged the implementation of preventive measures. The conference explicitly rejected the notion that silicosis developed from tuberculosis, and its deliberations have had long-lasting influence.

Although *Silicosis* reviews the *history* of medical diagnosis and of dust-related disease, this is not a technical or medical book and does not discuss the diagnosis of silicosis or its clinical, pathological, or physiological manifestations. Environmental conditions which lead to disease are not referenced in any technical or quantitative sense. The value of this book lies in its examination of the societal costs of industrial progress. What are the tradeoffs between national wealth and personal convenience and comfort versus workers’ and public health?

The inclusion of authors from ten countries offers important multi-national perspectives and bibliographic resources, many of them primary. The text is clearly written and supported by extensive documentation. *Silicosis* is highly recommended for its analysis of the evolution of the economic, political, social, legal, and regulatory aspects of this occupational disease.

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R. D. Saunders. *Underground and Radioactive: Adventures of a Uranium Miner in 1970s New Mexico*. Jefferson, NC: McFarland and Co., 2017; 218 pp., 31 b&w photos, 1 map, glos., ind., paper, \$29.95. ISBN: 9781476669960

In *Underground and Radioactive*, R. D. Saunders chronicles his experiences as a miner in the Grants Uranium District in the mid-1970s. In the first couple of chapters he describes how he went from being a college graduate in Illinois to