Book Reviews

BLACK LUNG: ANATOMY OF A PUBLIC HEALTH DISASTER

By Alan Derickson. 237 pp., illustrated. Ithaca, N.Y., Cornell University Press, 1998. $22.95. ISBN 0-8014-3186-7.

IN the classic story that exemplifies the public health approach to disease prevention, John Snow removed the handle of the Broad Street pump in London to halt a cholera epidemic. Snow knew neither the agent of the disease nor its mechanism, but he acted after making reasoned conclusions drawn from systematic observations of the distribution of the disease. In his carefully researched and exhaustively referenced book, *Black Lung: Anatomy of a Public Health Disaster,* historian Alan Derickson asks why the "pump handle" was not removed — why dust was not controlled — when so much was known for so long about the harmful effects of excessive dust exposure among coal miners.

Black Lung is a cautionary tale, warning of the consequences of allowing economic and political considerations to control public health decisions. Engaging, well-organized, and fast-paced, the book guides the reader through a century of change in the mining, scientific, and regulatory communities.

Beginning in the mid-19th century, first in the United Kingdom and then in the United States, lung diseases, commonly called "miner's asthma" or "miner's consumption" and medically labeled "anthracosis," were observed in coal miners. Sick miners had progressive dyspnea, chest discomfort, and cough, sometimes dramatically accompanied by the expectoration of copious quantities of black, inky sputum. Medical textbooks, including Osler's classic *Principles and Practice of Medicine* (New York: D. Appleton), first published in 1892, described a lung disease observed in miners and caused by exposure to dust.

But early in the 20th century, according to Derickson, conventional scientific wisdom seemed to have undergone a critical transformation. The observation in the United Kingdom that rates of tuberculosis were lower among miners than among laborers in urban areas led to the assertion in the United States that inhalation of coal-mine dust had a beneficial effect and that dust-induced pulmonary fibrosis hardened the lungs against infection. Derickson argues that as concern about the devastating effects of silica dust became widespread, a "reductionist" approach equated all dust-related hazards with silica, thereby deflecting attention from the independent risk posed by coal-mine dust. From this arose the belief that in the absence of silica, coal-mine dust is benign — discoloring the lungs but not causing impairment.

The belief that exposure to coal-mine dust had only benign effects could have been challenged by scientific inquiry. In fact, Derickson cites reports produced for the U.S. Department of Labor and the results of field investigations conducted by the U.S. Public Health Service indicating that miners had high death rates; diminished longevity and reduced pulmonary function as compared with other manual laborers; and a high rate of absence from work due to lung conditions. These reports, however, were not widely distributed, because access to workplaces was granted to government agencies in return for agreements to restrict communication of the results of investigations. For this reason, scientific evidence of the hazards of coal-dust exposure did not prompt requirements for improved ventilation or other preventive actions. Derickson also explores how efforts to minimize compensation to miners with lung disease may have affected the willingness of official bodies to recognize the connection between work and disease.

Unfortunately, Derickson fails to describe accurately the current concept of diversity in the lung diseases of coal miners. Exposure to coal-mine dust causes not only coal workers' pneumoconiosis but also chronic bronchitis and emphysema and, depending on the quartz content of the inhaled dust, silicosis. A clearer presentation of this complex of diseases would have provided readers with context for understanding the evolution of the varied beliefs and approaches to lung diseases among coal miners.

Compensating for this weakness is an important strength of the book: Derickson's description of the social and economic consequences of lung disease in the coal fields. Young boys began work as slate pickers, cleaning and sorting coal for entry-level wages in densely dusty environments. As the children grew older and stronger, they moved progressively up the job and pay ladders, helping to transport, load, and ultimately mine coal. When injury or disease incapacitated miners, these men, having no social safety net and minimal employment alternatives, climbed back down the job ladder, sometimes ending their careers in the breakers, cleaning coal as they did in their youth, still for entry-level wages, only this time in failing health.

The ultimate lesson of Derickson's book is one worth heeding: to prevent public health disasters, prudent action may be necessary, even in the face of scientific uncertainty.

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SALT, DIET AND HEALTH: NEPTUNE'S POISONED CHALICE; THE ORIGINS OF HIGH BLOOD PRESSURE

By Graham A. MacGregor and Hugh E. de Wardener. 233 pp. New York, Cambridge University Press, 1998. $24.95 ISBN 0-521-58352-7.

HOW many of us would like our salaries paid in salt? Not these authors, for sure; but their opening chapters remind us with choice historical and biblical anecdotes of the economic imperatives that are mirrored in the derivation of the word from the Latin *sal.* Although the book is clearly written for the layperson, these opening chapters are instructive and entertaining for all readers. Of several anecdotes that linger in my mind, I like the King Lear–like saga of the youngest daughter banished for likening her filial love to salt — until she persuaded the friendly cook to serve up a low-salt dinner to the salacious father. (The authors' suggested derivation of the word *salacious*

from *sal* is, however, suspect: the Latin *salire,* to jump, is the likelier root of a word that means something akin to frisky.) There is a good section on salt taxes and salt in the smuggling trade. We are asked to sympathize with the citizens of the Breton region in France who suffered unduly under the gabelle, a prerevolutionary salt tax, but do the authors miss a trick here? In the book's crusade against the iniquities of modern-day salt barons in the food industry, the obvious suggestion that salt should again be taxed, alongside tobacco and alcohol, is never made.

The chapters dealing with the more biologic topics of blood pressure and the kidney will not challenge the readers of the *Journal.* When it comes to the role of salt in hypertension, the agenda becomes clearer. The authors know that the best form of protagonism is a show of evenhandedness — less skillfully done here, it must be said, than in the balanced pro-salt piece in *Science* last year (G. Taubes. "The Political History of Salt." *Science* 1998;281:898-907). A priori arguments are not a substitute for scientific experimentation. The results of current outcome trials of antihypertensive agents in which 200,000 patients worldwide are currently participating will establish the benefits and risks of such treatments. Extrapolations from the observations in populations with various levels of salt intake that reducing the average salt intake by 3 g per day will prevent 40,000 strokes in the United Kingdom may be right; they may also be wrong. The results of the Dietary Approaches to Stop Hypertension (DASH) study suggested that the focus on salt may have diverted attention from other interesting dietary interactions with blood pressure (L.J. Appel, et al. "A Clinical Trial of the Effects of Dietary Patterns of Blood Pressure." *N Engl J Med* 1997;336:1117-24). Readers of this book could be forgiven if they failed to appreciate our current ignorance about the cause of hypertension in 90 percent of patients.

An interesting point of debate is whether the importance of salt-dependent abnormalities in the few monogenic syndromes of hypertension that have been unravelled argues for a predominant role of salt outside these syndromes. Because all of these disorders involve directly, or indirectly, an increase of sodium and potassium exchange in the distal tubule, patients with these syndromes present with hypokalemia as a recognizable phenotype. It would be an implausible coincidence if all monogenic syndromes of hypertension turned out to have a phenotype that trips off the Auto Analyzer.

The book's historical perspective permits a nicely presented account of the speculation that blacks with hypertension in the Americas have been selected for salt-retaining genetic alleles as a consequence of the horrific conditions of the slave trade: not only the trans-Atlantic voyage but also the equally brutal conditions of imprisonment while awaiting transport. The award for best picture in the book goes to the copper engraving from the Bibliothèque Nationale of a slave trader licking a slave's face to assess his fitness for voyage (salty sweat was presumably bad).

In the final chapter ("The Industrial Conspiracy") the authors reach the climax of their mission to enlighten the unwary about the evils of salt. Perhaps the purpose of the early emphasis in the book on the social impact of salt in medieval times was to prepare us for an ending fit for a morality tale. If this is an unconscious irony, even more ironic is the authors' incredulity that the food and salt industry should seek to protect their interests, given the authors' own detailed examination and description of the economic importance of salt in history.

The book is an excellent and enjoyable read. The amateur who is satisfied with certainty will derive more from it than the impartial professional seeking a challenge. For the majority of doctors and specialists in hypertension who are prepared to accept that salt has a role in determining blood pressure, perhaps early in life, the book succeeds as an example of the precept, "First, do no harm." The argument is also strong that in an age of spiraling drug costs we must strive to pursue nonpharmacologic methods of treating and preventing hypertension. Even the lobbyists, however, will wish to read this tract with a grain of salt.

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ENCYCLOPEDIA OF HUMAN NUTRITION

Edited by Michèle J. Sadler, with J.J. Strain and Benjamin Caballero. 1973 pp. in three volumes, illustrated. San Diego, Calif., Academic Press, 1999. $799. ISBN 0-12-226694-3.

THE *Encyclopedia of Human Nutrition* is a superb attempt to incorporate into one three-volume textbook the many elements of the rapidly expanding science of nutrition. The book is timely, given the increased interest in diet and health by the general public worldwide. It is broad based and covers the physiologic aspects of nutrient and energy requirements of different populations; measurements of dietary intake and nutritional status; the nutrient composition of the main food groups; associations between diet, lifestyle, and disease; clinical applications of nutrition to improve health; topical issues relating to the food-processing industry; influences affecting food choice and eating behavior; nutritional guidelines and public health policies in both developed and developing countries; international aspects of food labeling; and a range of other, related topics.

The effects of the globalization of modern life are particularly apparent in the field of nutrition. Food production and the availability of food in individual countries are highly dependent on the world market, and rapid changes in agricultural policies in a few key nations can have a global impact on the prices and availability of food. For these reasons, any encyclopedia of human nutrition must be international in its content. Appropriately, this book has an international editorial board and an international set of authors.

Because the table of contents is arranged alphabetically, many unrelated topics follow one another in the three volumes. I found this approach somewhat confusing. By contrast, the cross referencing in the table of contents is excellent and helps one find a particular subject easily. Each volume ends with a comprehensive set of tables and charts (Appendix II). The index is excellent and user-friendly in terms of helping the reader find tables, discussions of major topics, and cross references. The format of the index

should serve as a template for other comprehensive textbooks. However, it seems to me to be a waste of pages to reproduce Appendixes I and II in each volume.

In general, the coverage of most of the topics in nutrition, ranging from molecular biology to agriculture and food science and from social sciences in human behavior to clinical medicine, is excellent. The section on drug–nutrient interactions is extremely useful. However, the discussion of parenteral and enteral nutrition is superficial, and the references are not up to date. The section by Wilmore on long-term nutritional management provides additional information on these subjects. Likewise, the discussion of childhood nutrition is somewhat superficial, although the section on infant nutrition is quite good and comprehensive. Finally, fetal nutrition is a new and emerging subject that is barely mentioned.

The *Encyclopedia of Human Nutrition* is a superb attempt to produce a comprehensive textbook of human nutrition and should be in the library of every physician and nonphysician interested in the subject.

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DERMATOLOGY UPDATE FOR THE MILLENNIUM

The meeting, subtitled "Update on Skin Problems in Different Age Groups," will be held in San Francisco, Oct. 21–24.

Contact Organizing Secretariat, CCT Postgrad. Educ. Unlimited, 50-52 Union St., London SE1 1TD, United Kingdom; or call (44) 171 407-9731; or see http://www.sanfranderm.com; or fax (44) 171 378-9268; or e-mail sfderm@cctltd.u-net.com.

JOHNS HOPKINS UNIVERSITY

The following will be held in Baltimore: "7th Annual Progress in Hematologic Malignancies and Bone Marrow Transplantation" (Oct. 1) and "25th Annual Topics in Gastroenterology and Liver Disease" (Oct. 6–8).

Contact Program Coordinator, JHU School of Med., Turner 20, 720 Rutland Ave., Baltimore, MD 21205; or call (410) 955-2959; or e-mail cmenet@jhmi.edu; or see http://www.med.jhu.edu/cme; or fax (410) 955-0807.

INTERNATIONAL CLINICAL HYPERTHERMIA SOCIETY

The "22nd Meeting" will be held in Marina Del Ray, Calif., Sept. 23–25.

Contact Dr. Homayoon Shidnia, ICHS, University Heights Cancer Ctr., 1502 E. County Line Rd. S., Indianapolis, IN 46227; or call (317) 887-7651; or see http://www.hyperthermia-ichs.org; or fax (317) 887-7650; or e-mail shidnia@earthlink.net.

CUTTING EDGE IN HEADACHE TREATMENT

The "2nd Annual New Jersey Update on Head and Neck Pain" will be held in Teaneck, N.J., on Nov. 13.

Contact Dr. Sheldon Gross, Headache Cooperative of New England, 1 Northwestern Dr., Bloomfield, CT 06002; or call (860) 232-4344; or fax (860) 242-7725.

CALL FOR PAPERS

Papers are being accepted for the "2000 Volvo Awards for Low Back Pain Research," which recognize outstanding research in clinical studies, bioengineering studies, and studies in other basic science areas. Deadline for submission is Nov. 15.

Contact Prof. Alf Nachemson, Dept. of Orthopaedics, Sahlgrenska Univ. Hosp., S-413 45 Göteborg, Sweden.

EMERGENCY MEDICINE INTO THE 21ST CENTURY

The course will be offered in Cambridge, Mass., Oct. 3–6.

Contact Harvard MED–CME, P.O.B. 825, Boston, MA 02117-0825; or call (617) 432-1525.

RIYADH ARMED FORCES HOSPITAL

The following will be held in Riyadh, Saudi Arabia: "Comprehensive Management of Epilepsies" (Oct. 5–7); "9th Annual Basic ECG Interpretation Course" (Oct. 13 and 14); "1st International Radiology Pathology Course in the Middle East" (Oct. 18–21); and "8th Annual Advanced ECG & Arrhythmia Course" (Nov. 30–Dec. 2).

Contact Dept. of Postgrad. & Academic Affairs, RAFH, P.O. Box 7897, Riyadh 11159, Saudi Arabia; or call (966) 1 477-7714, ext. 4933; or fax (966) 1 476-0853.

AUTONOMIC NERVOUS SYSTEM

The "5th International Symposium" will be held in Big Island, Hawaii, Oct. 31–Nov. 2.

Contact Anita Zeller or Sue Paxton, American Autonomic Soc., Mayo Clinic, 811 Guggenheim, 200 First St., SW, Rochester, MN 55905; or call (507) 284-3375; or e-mail zeller.anita@mayo.edu; or fax (507) 284-3133.

MEDICAL COLLEGE OF VIRGINIA

The following will be held: "MARCOM III: Mid-Atlantic Regional Conference on Occupational Medicine" (Philadelphia, Sept. 17–19) and "8th Annual Wound Care Symposium" (Williamsburg, Va., Oct. 15–17).

Contact Nancie Mervis, Office of CME, Virginia Commonwealth Univ., MCV Campus, Box 980048, Richmond, VA 23298-0048; or call (800) 413-2872 (natl.) or (804) 828-3640 (Va.); or fax (804) 828-7438.

DIAMOND HEADACHE CLINIC

The following will be held: "Headache Update — 1999" (Lake Buena Vista, Fla., July 20–24) and "13th Annual Practicing Physician's Approach to the Difficult Headache Patient" (Rancho Mirage, Calif., Feb. 15–19).

Contact DHC, Research and Educ. Fdn., 467 W. Deming Place, Chicago, IL 60614; or call (773) 388-6363; or fax (773) 477-9712.

CALL FOR ABSTRACTS

Abstracts are being accepted for the "5th World Congress on Trauma, Shock, Inflammation, and Sepsis — Pathophysiology, Immune Consequences and Therapy," to be held in Munich, Germany, Feb. 29–March 4, 2000. Deadline for submission is Oct. 30.

Contact Dr. Eugen Faist, Dept. of Surgery, Ludwig–Maximilians–Univ. of Munich, Klin. Grosshadern, Marchioninistrasse 15, 81377 Munich, Germany; or see http://www.med.uni-muenchen.de/gch/5th; or call (49) 89 7095-5461; or e-mail faist@gch.med.uni-muenchen.de; or fax (49) 89 7095-2460.

RENAL DISEASE AND ELECTROLYTE DISORDERS

The "Annual Course" will be offered in Aspen, Colo., July 26–30.

Contact Office of CME, Univ. of Colorado School of Med., 4200 E. 9th Ave., C-295, Denver, CO 80262; or call (800) 882-9153 (natl.) or (303) 372-9054 (Colo.); or fax (303) 372-9065.

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