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and 60s, to the more recent, “fairly successful”, attempts by the WHO to minimize the devastating effects of river blindness (*onchocerciasis*) in Central Africa by control of the aptly named vector, *Simulium damnosum*.

The author’s credentials are impeccable. Employed by ICI while writing his PhD thesis, just when the importance of the development of DDT as an insecticide was becoming apparent, he proceeded, via MRC grants, to become entomological adviser to the Ministry of Health during the Second World War; at the end of the war, he went to the London School of Hygiene and Tropical Medicine. He also served on WHO and FAO Expert Panels on Insecticides and Pest Resistance. With all this inside knowledge, it is inevitably the chapters on vector control in the post-war years which are most satisfying and impressive. They include immensely learned and very technical discussions of the mechanisms of pesticide resistance, and of evidence of DDT persistence in soil as revealed by gas-liquid chromatography—e.g., “These figures can be judged from the analogies in time: 1mg/l being equivalent to 1s in 2 3/4 h, while 1 femto g/l femtogram [*sic*] is equivalent to 1s in 317 million years!” (this in a section on the toxic hazards of DDT, p. 232).

The early years of the “discovery and 90 years of effort to prevent [insect transmission of disease]” are given low priority compared to the fifty post-war years of which Professor Busvine has such expert personal knowledge. In view of the ample existing literature on the earlier period, this is probably a wise decision on the part of the author. The discussion of the more recent “history”, of the pros and cons of current methods of vector control, of environmental effects, of the problems presented by the abilities of both the primary parasites and their vectors to develop resistance, is thorough, if occasionally a shade too technical to appeal to the average historian. It *will* be of absorbing interest to the reader with “a foot in both camps”: with a taste for the facts and figures behind today’s controversial and so far insoluble problems of vector control versus environmental concerns, and the questions of long-term ability to mutate on the part of both parasites and vectors, be they the *plasmodium* and mosquitoes of malaria, or the *Simulium* and *Onchocercas* of river blindness.

Some readers may not entirely agree with the author’s disclaimer in his Foreword that a “detailed index has not seemed necessary” in the presence of a “rather full list of contents” and “adequate references to published accounts”. An index, or at least cross-references to authors and their publications, would indeed have been welcome, and would have added to the book’s not inconsiderable value as a work of reference. An author index would have been especially useful.

Lise Wilkinson, Royal Postgraduate Medical School

A. DOIG, J. P. S. FERGUSON, I. A. MILNE and R. PASSMORE (eds), *William Cullen and the eighteenth-century medical world: a bicentenary exhibition and symposium arranged by the Royal College of Physicians of Edinburgh in 1990*, Edinburgh University Press, 1993, pp. xiii, 256, illus., £27.50 (0-7486-0302-6).

William Cullen ought to be one of the best understood figures in the history of medicine. He was the subject of one of the finest medical biographies, John Thomson’s *Life*, he took the centre stage in Arthur Donovan’s *Philosophical chemistry in the Scottish Enlightenment*, and has appeared prominently in various theses and articles. Yet the Cullen literature is characterized by the variety of its interpretations. These are a product not simply of the historiographical biases of authors but of the intellectual richness of the world in which Cullen lived, its political complexity and, not least, the variety and depth of work of a man who died in 1790, a few weeks short of his eightieth birthday. A symposium and exhibition in 1990, which this book records, commemorated the two hundredth anniversary of Cullen’s death.

Varied in quality though it is, this is a valuable volume. The exhibition is well recorded. John Christie usefully surveys Cullen’s chemistry, making a strong claim for the consistency of his chemical work. Teaching, research, theorizing, and application were all related enterprises for a man who developed for himself the role of philosophical chemist. Michael Barfoot’s paper on the meanings of system in Cullen’s medical teaching is similar to Christie’s. Interpreted in isolation, Cullen’s various uses of the term system suggest incoherence, dogmatism or contradiction. But

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attention to Cullen's metaphysics, shared to a great extent with David Hume and Adam Smith, reveals a larger project, the endorsement of learning, enquiry, and progress. Cullen, it might be said, was creating the role of the philosophical doctor as well as that of the philosophical chemist. Günter Risse is interesting on Cullen as a clinician. Risse shows there were significant differences between Cullen's practice as evidenced by his clinical lectures in the infirmary and his consultation by letter. At first sight this might be expected. Cullen was dealing with quite different clientele: the poor in the hospital and the wealthy writing from their homes. But clinical lectures cannot be taken as a mirror of regular infirmary practice. And, equally important, clinical lectures on the poor could have been devices for teaching aspiring doctors to practise on the rich. W. F. Bynum's paper contains an important insight, which, with hindsight, seems obvious. The meaning of nervous system for Cullen comprehended the now separate muscular system. This insight, Bynum shows, opens a variety of new perspectives on Cullen's work. Noteworthy too is Roger Emerson's reminder that Edinburgh University was in many respects not unique in the eighteenth century. It was locked, like Glasgow, into a dense local and national patronage network. Other papers in the volume deal with Cullen's place in eighteenth-century medicine, general practice in Hamilton, Cullen and dietetics, his nosology, his influence on American medicine, and his place in the founding of the Royal Medical Society.

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W. F. BYNUM and ROY PORTER (eds), *Medicine and the five senses*, Cambridge University Press, 1993, pp. xvii, 331, illus., £40.00, \$59.95 (0-521-36114-1).

Sight, hearing, touch, taste, and smell; the five senses were gifts of God and the subject of philosophical speculation: gateways to the mind, the basis of all knowledge. They were also, of course, the subject of physiological and anatomical speculation. What was, for instance, the organ of smell? Was it the nose, or as Vesalius believed, the olfactory lobes of the brain to which smells passed directly through the holes in the cribriform plate of the skull? What of the sensations themselves? Sights, sounds, tastes could be delightful or disturbing; so could smells, but bad smells might be dangerous. Were stinks or bad odours, immaterial qualities or substances—smoky vapours or miasmas—capable of producing disease?

These are some of the subjects discussed in this wide-ranging and enthralling series of essays. Sensory physiology, however, is only touched on in passing, and then mainly in a classical context. In so far as there are central themes in these essays they are the role of the senses in the development of clinical diagnosis, and the role of iconography in medicine. The three essays by art historians, Sears, Kemp, and Jordanova, are memorable explorations of the layers of meaning and purpose which lie behind anatomical and other illustrations. The genius of Leonardo da Vinci, incidentally, never ceases to amaze; nor, to my mind, does the extraordinary skill of the unsung engravers of the eighteenth century who reproduced drawings and appearances with incredible exactitude, satisfying William Hunter's belief that the object must be reproduced exactly as seen, even showing irrelevancies such as post-mortem staining, if it happened to be there. For to Hunter and others, illustrations could be—should be—the whole truth and substitute for the real thing down to the smallest detail. I have one microscopic criticism. In fig. 29, p. 99, an illustration by Vesalius, the skin is supposed to have been stripped entirely from the right thigh but only partially from the left (p. 97). I cannot see it for the life of me. Was the wrong illustration chosen?

Elsewhere, Nutton on Galen at the bedside, and Palmer on smells, are models of clarity. Brockliss introduces us to the French Galenists of the seventeenth century. The augmentation of the senses by percussion and stethoscopy is the subject of Nicholson's essay. Lawrence deals with the training of the senses of medical students in eighteenth-century London. Porter describes the rise of physical examination in the nineteenth century to the embarrassment of women. Gilman deals with touch, sexuality and disease, ending his essay with a penetrating analysis of the images of AIDS produced by American public health authorities.

Brieger centres his discussion of surgery in the USA between 1875 and 1899 on the two famous paintings by Thomas Eakins: *The Gross Clinic* and *The Agnew Clinic*. Borrell and Reiser produce excellent essays concerned largely with the effect of the rise of medical technology on the art of diagnosis.