BOOK REVIEWS

The Phenomenon of the Journal

Medical Journals and Medical Knowledge. Historical Essays. W. F. BYNUM, STEPHEN LOCK, and ROY PORTER, Eds. Routledge, Chapman and Hall, New York, 1992. xii, 279 pp. $97.50. Wellcome Institute Series in the History of Medicine.

The merit of publishing the results of research as printed word in journals is coming under debate, especially in medicine. Established mechanisms of making research results available to the medical and scientific communities and of certifying the veracity of findings are being challenged both by new technology and by current events. Electronic communications networks increasingly offer alternative possibilities for speedy transmission and diffusion of knowledge. The conflict faced by researchers between the status of publication in leading journals, with their time-consuming mechanisms of peer review and revision, and the need for expeditious appearance of findings has been heightened by the AIDS epidemic. As a consequence, a new era can be foreseen in which printed journals may have different functions from those they do now. They may become primarily reviews of a range of research results rather than forums for presentation of new material. At the moment, the effect of current forces for change is uncertain, but it is clear that established ways of doing business are unlikely to prevail.

Even while this potential transformation in the diffusion of information is at hand, too little is known about how publication in journals became the accepted mode of presenting and authenticating medical and scientific work. The questions are many. How, for instance, did the printed account in a journal gain primacy in priority claims over oral presentation and private communication? What consequences did this have for the growth of specialized journalism? How, in turn, did the journal affect the perceptions of researchers and practitioners about the nature of their enterprise and their sense of a professional scientific and medical community? Some historians are beginning to investigate these issues. To appreciate them more fully in connection with medicine, the essays in the book under review make a distinct contribution by examining the linkage of medical journalism and medical knowledge in its historical context.

The editors of *Medical Journals and Medical Knowledge* draw attention in their introduction to the fact that the evolution of medical journals is a surprisingly little-studied subject. The focus, contents, formats, editorial practices, finances, and audiences of even the best-known journals remain largely unexplored. To make a start, the editors have turned the papers presented at a commemorative occasion, a conference held to mark the 150th anniversary of the founding of the *British Medical Journal*, into an opportunity to rectify this neglect. Their endeavor, beyond the elucidation of the character of medical journalism itself, is to interpret the effect the dissemination of information has on the economy of medical knowledge and the making of the medical community. They also seek to place the history of medical journalism within the larger context of the history of journalism and publishing.

The book has 13 essays, all by different authors, and they focus primarily on British medical journalism, with emphasis, naturally enough given the inspiration for the volume, on the *BMJ*. In fact, the *Lancet* may almost be said to receive short shrift, given its importance in the British context, but, as the editors indicate, the aim is to move away from the acceptance of the history of the *Lancet* as the epitome of the history of British medical journalism. Two essays draw on American experience and offer a comparative dimension to the British material. Non-English-language journals are not a topic of the work, although French and German parallels would be valuable. Only one essay in the book, by Michael Shepherd on psychiatric journals and the evolution of psychological medicine, attempts the difficult task of surveying the spectrum of journals emerging across Europe.

Three essays acquaint the reader with 18th- and 19th-century developments. Roy Porter's opening essay indicates succinctly that journals devoted specifically to medicine are an 18th-century product and were often linked to medical societies or institutions. Commercial ventures essayed before 1800 were mostly short-lived. The long-running medical journal that is financially viable and presents research results is a 19th-century phenomenon. Broader questions for medical journalism and its historians are posed by Porter. One, which remains important, is whether all medical information should be included in published articles or whether some particulars, such as names of patients, should be kept confidential. Another relates to the accreditation of findings. How should editors assess the merits for publication of submissions received? No refereeing system satisfactory to all parties has ever been devised.

W. F. Bynum and Janice C. Wilson delineate characteristic features of British medical journals of the 19th century on the basis of a review of 20 periodicals. Their assessment shows that editing could not then be a full-time occupation, primarily for financial reasons. Jean and Irvine Loudon tabulate the growth in numbers of medical periodicals between 1800 and 1850 and document the ephemeral nature of many. They conclude by indicating which journals supported the reforms in medical education and registration of practitioners that were accomplished by the Medical Act of 1858.

Medicine in other types of periodical is the subject of several essays. In an innovative discussion, drawing on largely untapped material, Ruth Richardson looks at Victorian interest in public health matters from the point of view of the *Builder*, an architectural weekly. Her research shows that issues of sanitary reform and construction were closely linked. Furthermore, George Godwin, the editor of the *Builder* from 1843 to 1883, emerges as a figure worthy to join the established pantheon of 19th-century British social reformers and as one of the great journal editors of his time. W. H. Brock's overview of 19th-century science periodicals, including the *Philosophical Magazine* and *Nature*, finds that medicine did not figure prominently in such literature. In an interesting discussion, Michael Harris uses reporting on criminal activities in generalist newspapers to examine ideas about the theory and practice of medicine in Victorian society.

The contributions directly related to the *BMJ* include a retrospect by Peter Bartrip, author of a recent history of the journal; an analysis of the journal's importance in America by John Burnham, raising questions about cultural nationalism in medicine and scientific communication; an examination of the *BMJ* and the relation of general practitioners to the state from 1840 to 1990 by Julian Tudor Hart; and an overview by Christopher C. Booth of the erosion of the position of consultant within the profession and British society as documented by the *BMJ*. A thought-provoking essay by Jane Lewis evaluating the changing perceptions of public health professionals

and practice in medical journals and one by Elizabeth Knoll on the American Medical Association and its journal *JAMA* round out the volume.

Though overall the essays in the volume may be said to concentrate on laying the groundwork for further research rather than tackling the more intriguing questions relating to medical journalism, they do show that the interaction of journal publication and medical knowledge over time is an area well worth study.

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Engaging the Past

A Skeptical Biochemist. JOSEPH FRUTON. Harvard University Press, Cambridge, MA, 1992. xii, 330 pp. $29.95.

When a scientist of distinction puts forth his reflections on the last 60 years of his own subject historians of science may display symptoms of nervous anxiety. Does not such literature, with all the attendant dangers of writing "history" from the standpoint of the present, get their discipline a bad name? Is not such an enterprise foredoomed by envisioning science solely in terms of its internal structure and neglecting the insights suggested by social history, sociology, and anthropology? Do we not have here the ultimate and unspeakable heresy of "Whiggishness"? When such an author ventures moreover to offer an extended critique of current and recent historiography the impulse may well be to reach for one's Kalashnikov (or its literary equivalent).

Such misgivings about what might be called "a scientist's approach to history" are not entirely unfounded. But this book by Joseph Fruton should be taken seriously by the historical community precisely because it does address with courage and skill many of the issues that have divided scientists and historians with regard to recountings of the past. The author is not "merely" a distinguished worker in the field of protein biochemistry. By many earlier publications he has also shown himself to be a very competent historian of his science and a formidable opponent of those who would undervalue a scientist's insight in historical writing.

The title of Fruton's book echoes that of Robert Boyle's *Sceptical Chymist* of 1662, and so does his program. Like his English predecessor, he is deeply concerned with clarity of expression and fundamental definition. In the final chapter of his book Fruton offers a series of reflections on biochemical literature, stressing the transformation of chemical language by Lavoisier and his contemporaries and the subsequent fortunes of terms like "gene," "enzyme," "affinity," and other "words of the tribe." And he has some wise things to say about the role, fraudulent as Peter Medawar argued or otherwise, of the scientific paper and journal.

Just as Boyle was profoundly skeptical about many hallowed beliefs of the 17th century, particularly the traditions of Aristotelianism and alchemy, so Fruton maintains a healthy skepticism toward much of the received doctrine of our own day. "Skepticism has played a large role in the interplay of chemical and biological thought," he writes, instancing the well-known reluctance of chemists to take seriously chemical hypotheses advanced by biologists and *vice versa*. And underlying the whole book is a profound skepticism about the degree of illumination shed by modern analytical philosophy upon the interplay between biology and chemistry. One chapter provides a truly magisterial survey of a century of such interplay, touching on such important concepts as specificity, individuality, holism, and reductionism.

Fruton's skepticism extends to various popular characterizations of "the scientific method." The Popperian views of Medawar come in for special criticism, not least for their emphasis on inductivism, which Fruton regards as obscuring the real historical development of science. Apparent support for inductivism by various notables is dismissed as rhetoric called forth by particular circumstances, not as representing a considered agenda for their work in science. The polemic of Claude Bernard (cited by Medawar) is regarded as a manifestation of an egocentric desire to project himself as the founder of "experimental medicine," and Liebig's fulminations against Bacon are seen as part of a general campaign against the English, who were, in the 1860s, forsaking Liebig's theories on agriculture for the more modern

Vignettes: Publicity

[Richard] Feynman resented the polished myths of most scientific history, submerging the false steps and halting uncertainties under a surface of orderly intellectual progress, but he created a myth of his own. When he had ascended to the top of the physicists' mental pantheon of heroes, stories of his genius and his adventures became a sort of art form within the community. Feynman stories were clever and comic. They gradually created a legend from which their subject (and chief purveyor) seldom emerged.

—*James Gleick*, in *Genius: The Life and Science of Richard Feynman* (Pantheon)

In writing this book, I have become very much aware that my training is as a viewspaperman rather than a scholar. A viewspaperman when in full employment publishes perhaps one thousand words a day, and is anxious to have his views considered and words used, with or without attribution, so as to keep the discussion going . . . . Scholars . . . publish far fewer words a year, and can become very cross if somebody repeats them without attribution. Johnny [von Neumann] did not belong to this company. He wanted the ideas pulsing each moment through his mind to get quickly into the public domain, though preferably not through journalists.

—*Norman Macrae*, in *John von Neumann* (Pantheon)

Whistleblowers, nemesis figures, and journalists are often lumped together in the same analytical stew, perhaps because the publicity-prone whistleblowers or determined nemesis figures have so often used the press as the means for drawing attention to their accusations. The role that science journalism has actually played in the fraud controversy, however, has not been either as aggressive as its critics charge or as courageous as the journalists themselves might like to think. They have been drowsy watchdogs, not hyperactive pit bulls.

—*Marcel C. LaFollette*, in *Stealing into Print: Fraud, Plagiarism, and Misconduct in Scientific Publishing* (University of California Press)