raising all kinds of interesting questions. How did surgeons fight to establish their position, especially since the "German" context is rather different from the English? How did the relations between the various German states affect the pattern of moving around of medical men? Could we, through the biographies of these two men, learn something more about the differences between Berlin and Viennese practice? How did these German surgeons place themselves in the international discussions on problems like hospital fevers, epidemics, etc.?

Billroth, especially, was a prolific writer and has left us an enormous correspondence, part of which was published in German in 1895, but much of which is still widely scattered. Both the biography by Absolon in English in 1979, and the present author make ample use of these letters. Much of the biographical work on Dieffenbach, which Genshorek quotes from, dates back to before World War II. It seems to me that biography as a genre is far from having reached its limits, and if this volume makes anything clear, it is that a lot of work can still be done.

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THOMAS J. DEELEY, *Wilhelm Conrad Röntgen—his life and the new kind of rays,* Cardiff, Tenovus Cancer Information Centre (11 Whitchurch Road, Cardiff CF4 3JN), 8vo, pp. 79, illus., £2·50 (including postage).

Röntgen's discovery of X-rays in late 1895 has had a profound effect on the history of medicine. Within a few weeks of the discovery, X-rays had been applied to diagnosis and, shortly after, to therapeutics. Today, it is virtually impossible to imagine medicine without X-rays. Such an impact has stimulated interest in the discoverer of X-rays, and a small industry in Röntgen biographies has emerged. The Wellcome Institute Subject Catalogue of the History of Medicine lists seventy-six articles and books on Röntgen, and this is not complete. Deeley, however, notes (correctly) that the majority of the *major* works are out of print. He hopes to remedy this, and to perpetuate the memory of Röntgen. Given the numerous articles on Röntgen that have appeared in recent years, he is not alone in these objectives.

The problem with Deeley's pamphlet is that it is academically too lightweight to compete with the older biographies of Röntgen. Indeed, it offers but the barest outline of Röntgen's life, and an inadequate history of X-rays. The section on radiation hazards is only eight lines long! Neither does Deeley hit the popular market. The text is often dull and laboured, and at times is little more than a child's guide to X-rays.

Over half the pamphlet comprises ten appendices, including English translations of Röntgen's discovery accounts, and contemporary reactions to them. The other appendices cover the *British Journal of Radiology,* Röntgen on postage stamps, and Röntgen, an eponym. Inexplicably, about half of the last appendix comprises a preface explaining how the English language has been enlarged, and exemplifying eponyms!

The discovery and subsequent use of X-rays certainly can accommodate another book. Unfortunately, Deeley's account is not it.

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JAMES D. HARDY, *The world of surgery 1945–1985. Memoirs of one participant*, Philadelphia, University of Pennsylvania Press, 1986, 8vo, pp. xi, 385, illus., £29.95.

These detailed memoirs are drawn from James Hardy's recollections, notebook, files of letters, and a war diary, and are written in this manner rather than a formal medical history so that the reader may appreciate the special perception of the author at the time, as thus recorded. He recalls his early years in Alabama; his medical career at the University of Pennsylvania, and later in the University of Tennessee Medical College. His service in World War II caused him to transfer from medicine to surgery.

Isidor Ravdin, an outstanding surgeon, greatly influenced Hardy in his outlook by stating that "in the surgery of the future the individualist will be left by the roadside; for after all surgery

is part of that broader field of experimental pathology to which all medical sciences belong". This is reflected in the thirty important years Hardy spent as Chairman and Professor in the Department of Surgery at the University of Mississipi in Jackson, where he divided his activities among surgical practice, teaching, and research.

The period of his memoirs saw advances in surgical pathology and anaesthesia. Also arterial surgery, open-heart surgery, organ transplantation, and the artificial heart and other prostheses were developed. Following extensive research, including a study of the moral problems, his team undertook and recorded the first human lung and heart transplants, in 1963 and 1964 respectively.

Hardy was not only an active surgeon, but as an author contributed much to surgical literature. His wide reading, too, he regarded as a form of education. His most gratifying honour was his election as President of the American College of Surgeons in 1980.

It is ironic that James Hardy, vascular surgeon, should undergo in 1982 and 1985 carotid endarterectomy. His well-earned retirement allowed him professional rest to enjoy his "closely knit" family life.

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VIVIEN T. THOMAS, *Pioneering research in surgical shock and cardiovascular surgery. Vivien Thomas and his work with Alfred Blalock*, Philadelphia, University of Pennsylvania Press, 1985, 8vo, pp. xx, 245, illus., £29.95.

This is a remarkable autobiography by a remarkable man. Owing to "collapse of the Stock Market", this American Negro was unable to proceed to a medical career. Luckily, he became Alfred Blalock's technician first at Vanderbilt University and later at Johns Hopkins University, both in the Experimental Surgery Laboratories. With his aptitude to learn and his manual dexterity, during the next twenty-eight years, Vivien Thomas became a first-class trained surgical assistant. He was at the ringside at most of the pioneer procedures. Blalock's work on surgical shock deserves great credit. The development of cardiovascular surgery was largely due to the backroom expertise. This culminated in the successful correction of Fallot's Tetralogy in 1944, following eight years of intense research. Consideration of this anomaly was instigated by Helen Taussig and perfected by Blalock and Cooley on a child. It is now a routine procedure for "blue babies".

The old Hunterian Laboratory in Baltimore was the cradle of many surgeons who became well known in after years, such as Henry Bahnson, Denton Cooley, Rollins Halon, Mark Ravitch, and David C. Sabiston jun. Each contributed notable works in pioneering cardiovascular procedures, most of which were recorded in surgical journals. Sixty-four such papers are listed in the references.

Vivien Thomas was not only a skilled operator, but also helped in clinical assessment, invented a few surgical instruments, and taught routine animal surgery in the laboratory. With Blalock, he had a good loyal understanding. Towards the end of his chief's career, the research programme slackened. In 1971, Thomas was presented with a portrait of himself given by the Old Hands Club (former Halsted Residents). Five years later, the honorary degree of Doctor of Laws was conferred on him. Happily, the portraits of Blalock and Thomas hang beside each other in the lobby of the Alfred Blalock Clinical Science building—the master beside his right-hand man.

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RUDOLF VIRCHOW, *Medizin und Naturwissenschaft. Zwei Reden 1845*, with introduction by Werner Scheler, Berlin DDR, Akademie Verlag, 1986, 8vo, pp. 80, M.30.00.

Handsomely bound in red cloth with gold lettering on the front and spine, this volume is one in the series *Dokumente der Wissenschafts-geschichte*, edited by Christa Kirsten and Kurt Zeisler in