need for communication among those fields to both detect risks and promote benefits. But the authors cite the absence of established traditions of communication among experts in the diverse areas touched by nanotechnology as a problem, and they are right.

The combination of synopses of important issues bearing on the development and use of emerging technologies, interesting cases, brief but important documents, an informative glossary, a clear style of presentation, and an interdisciplinary focus in addressing considered problems make this an attractive book for reference, teaching, and gaining a general understanding of how such technologies may affect us. But the density of the elements that converge to influence the use and effects of new technologies should warn us that, despite our best efforts, we are in for surprises.

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History of Medicine


GOING BEYOND SIMPLY TELLING the story of the rise of Western medicine and its interplay with science, society, and the public, this pocketbook version of a larger, illustrated text does not allow its compact size to reduce medical history to an oversimplified, caricatured vision of the past. True, it broadly views medicine as oscillating around the poles of paternalism, liberalism, professionalism, and corporatism, but merely identifying such patterns is not considered explanatory here.

Indeed, the critical way that the authors put history under the microscope leads readers to ask themselves hard questions like: Who and what should control the shape of medicine? How adequately does it meet the needs of the sick? Besides healing, what other tasks, eg, human experimentation or support of humanitarian movements, should be its mission? Will it succumb to the inverse square law, allowing costs and complexity to overwhelm its utility? Is medicine losing its way, does it need to redefine its goals?

The authors, under the editorship of the popular and prolific late medical historian Roy Porter, thus instill real, present-day meaning to “medical history.”

The roots of the paradox that “the healthier Western society becomes, the more medicine it craves” include the growth of “medicine-mongering” (which has fostered the public’s preoccupation with sickness and illusions about positive health) and “can-do, must-do technological perfectibil[is]m.” With “diagnostic creep,” ever more disorders are “concocted” by new laboratory tests “of dubious reliability,” leading to the “medication of normal life events (such as menopause), to converting risks into diseases, and to treating trivial complaints with fancy procedures.”

The blossoming of medical insurance schemes, the “modern medico-industrial complex,” and how the political economy of medicine has been fundamentally transformed are well explored:

For 150 years, the political economy of public medicine had focused on death rates in the community; now it is becoming a branch of corporate economics, focused on the costs and benefits of medical services.

Hence, as medicine nears the top of the scientific mountain, “the crown of victory has been snatched from the physician’s head.” No longer supplying what is psychologically required to gratify patients, the “doctor as body-technician” may cheapen his or her empathy to the type of sympathy “that a garage mechanic might express when reporting a broken crankshaft.”

It was in the 18th century that doctors started diverting their attention from the individual sick person to the type of disease the person had, and French-inspired “biographical medicine” ebbed further in the 19th century as laboratory medicine grew, especially in Germany. Now that the possibility of “personalized scientific medicine” is turning attention back to the individual, the British Human Genetics Commission has even considered creating a complete gene profile of every baby at birth—“bar-coding babies” as the idea was facetiously called. As an aside, the British have never been afraid to think the unthinkable: they were the first to control animal experimentation and the first “in having legalized research on human embryos up to the age of 14 days.”

To illustrate the diversity of facts one learns here, the first university chair of pharmacology was established not in Britain, France, or Germany, but Estonia. “France led the world in surgery for most of the 18th century, drawing students from all over Europe.” In 1800, English lunatics were mainly secured in for-profit private asylums, forming part of what was bluntly called “the trade in lunacy.” Over the last several decades, about 60% of “knowledge judged to be essential for later clinical advance” has come from basic research findings. But targeted research has also long borne fruit:

Louis Pasteur was commissioned by the French government to find ways of preventing wine from turning into vinegar, and to stop sheep from dying of anthrax. In solving these and other practical problems he effectively created the science of bacteriology.

A few errors could have been corrected before this mainly Eurocentric portrayal of medicine’s past was reissued: the Mayo Clinic is in Rochester Minnesota, not New York, Medicare was not passed “in 1965 under President Kennedy,” etc. But to be fair, the original ten chapters do not otherwise need updating. They cover “The History of Disease,” “The Rise of Medicine,” “What Is Disease,” “Primary Care,” “Medical Science,” “Hospitals and Surgery,” “Drug Treatment and the Rise of Pharmacology,” “Mental Illness,” “Medicine, Society, and the State,” and “Looking to the Future.” The new, thought-provoking “Looking

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to the Future Revisited’ again exemplifies why history is important. The practice of our profession without a sense of its historical context precludes meaningful engagement with the larger ethical and political concerns of society.

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Surgery at the Brigham


The Peter Bent Brigham Hospital, named after the Boston restaurateur and businessman who generously endowed it, is recognized worldwide as a center of excellence. Yet, by the standards of other great medical institutions, founded by medieval religious bodies or 18th-century benefactors, it is “modern,” dating merely from 1912. Again, unlike so many of its rivals, with immense wards branching like leaves from endless miles of corridors, it was tiny—280 beds at the most, before it came to the end of its independent existence in 1980, when it amalgamated with the Boston Hospital for Women to become today’s Brigham and Women’s Hospital.

Nicholas L. Tilney, MD, a senior surgeon at Brigham and Women’s Hospital and for many years director of kidney transplantation, has done us a great service by documenting the story of the surgeons and surgery at the Brigham over those exciting 68 years. During that time, there were four surgeons in chief, each placed his stamp and personality on the institution.

Harvey Cushing arrived at the new hospital from Johns Hopkins, where he had trained under Halsted. There is no doubt that, almost single-handedly, Cushing created the specialty of neurosurgery. He devised many of the techniques used today, including diathermy; trained a large number of the next generation of neurosurgeons, both in the United States and overseas; and explored the pathology and surgery of the pituitary and hypothalamus. In addition, he set up the surgical laboratory facilities and the Hunterian animal laboratory, where students and graduates could develop their surgical and anesthetic skills. Incidentally, Cushing’s two-volume biography of his father figure, William Osler, gained him the Pulitzer prize.

Cushing was followed in 1932 by Elliott Cutler, his former senior resident, another brilliant surgical star, with an interest in almost every branch of surgery. Cutler had performed the first successful valvuloplasty for mitral stenosis by the transventricular route in 1923—the same year that Henry Souttar, at The London Hospital, performed a successful transatrial split of the valve (although the physicians at The London refused to refer further cases to him!). Cutler’s work at the Brigham was interrupted by his distinguished war service, and he returned already suffering from advanced prostatic cancer.

Cutler was succeeded as chief by Francis Moore, another star, in 1948. Moore, using recently discovered radioisotope techniques, pioneered studies of the fluid requirements of the postoperative and the traumatized patient and of the metabolic response to injury. His classic Metabolic Care of the Surgical Patient was the standard textbook used worldwide by surgeons of my generation.

John Mannick succeeded Moore in 1976 and presided over the last years of the Brigham before its merger. Himself a vascular and transplant surgeon of note, he carried on the hospital’s tradition of research and teaching.

But it was not just these four distinguished chiefs of surgery that made the Brigham a surgical powerhouse—it was the extraordinary group of residents, researchers, and consultants the hospital attracted. Many went on to head academic units in the United States and overseas.

To choose a few examples, Hugh Cairns, an Australian, after training with Cushing, went on to become one of the founders of modern neurosurgery in England. He was elected professor of surgery in Oxford (and I was lucky enough to be one of his students). John Homans was one of the fathers of today’s surgery of the venous system. Robert Gross performed the first successful closure of a persistent ductus arteriosus, while Charles Hufnagel devised early artificial heart valves. Dwight Harken, having successfully removed dozens of metallic foreign bodies from the heart and great vessels while stationed in England in World War I, was invited to the Brigham by Moore in 1948 and helped to develop the cardiac surgery of today. The first successful renal transplantation between identical twins was carried out by Joseph Murray in 1954. He was to receive the Nobel Prize in 1990—one of only seven surgeons to do so. Murray’s laboratory team was joined in 1960 by a young English surgical registrar, Roy Calne, whose experimental work on kidney transplantation in the dog using azathioprine opened the whole field of organ transplantation. Calne subsequently became professor and head of the department of surgery at Cambridge and is one of our foremost academic surgeons.

With this feast of material at his command, Dr Tilney has produced a scholarly and fascinating book—well written, copiously illustrated, and full of interesting stories. It will provide reading pleasure to any surgeon with an interest in the recent history of surgical craft and science. It now remains, of course, for some suitably qualified physician to match Tilney’s success with the story of the medical side of this (comparatively) small and (comparatively) new but, nevertheless, world-famous institution.

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