

History, Technology

Science and Technology in Medicine: An Illustrated Account Based on Ninety-Nine Landmark Publications From Five Centuries, by Andras Gedeon, 551 pp, with illus, \$89.95, ISBN 0-387-27874-5, New York, NY, Springer, 2006.

SCIENCE AND TECHNOLOGY IN MEDICINE is a large book whose cover is graced by the image of an aseptically clothed scientist conducting an experiment. It has two forewords, a preface, an introduction, and a name index but no table of contents or subject index and contains more than 1100 illustrations.

Following the introductory material is a list of "Ninety-nine Landmark Publications at a Glance." Each of the subsequent 99 sections comprising the main body of the book begins with a one-paragraph sketch of the life and published work of a particular scientist. Next come excerpts from the subject's selected landmark publication and a final "In Perspective" on how the contribution advanced medical science. Author Andras Gedeon asserts that these publications "describe the historical progression of important contributions of science and technology to the field of medicine."

In the introductory material, Gedeon explains his intention both to provide new and interesting information and to entertain. He succeeds at both aims. Only a paragraph each, the sketches nevertheless convey emotions ranging from triumph, for many that of receiving a Noble Prize, to the devastating grief of Emil Fisher, who lost two of his three sons in World War I. Medicine was a background common to many but not all of the scientists. For example, Daniel Bernoulli, familiar to aeronautical engineers, was first trained as a physician. His landmark publication on hydrodynamics applies to fluid flow in the human body as well as airflow over an airplane wing. Joseph Priestley was a Unitarian minister whose study of gasses set the stage for investigating the role of blood in respiration.

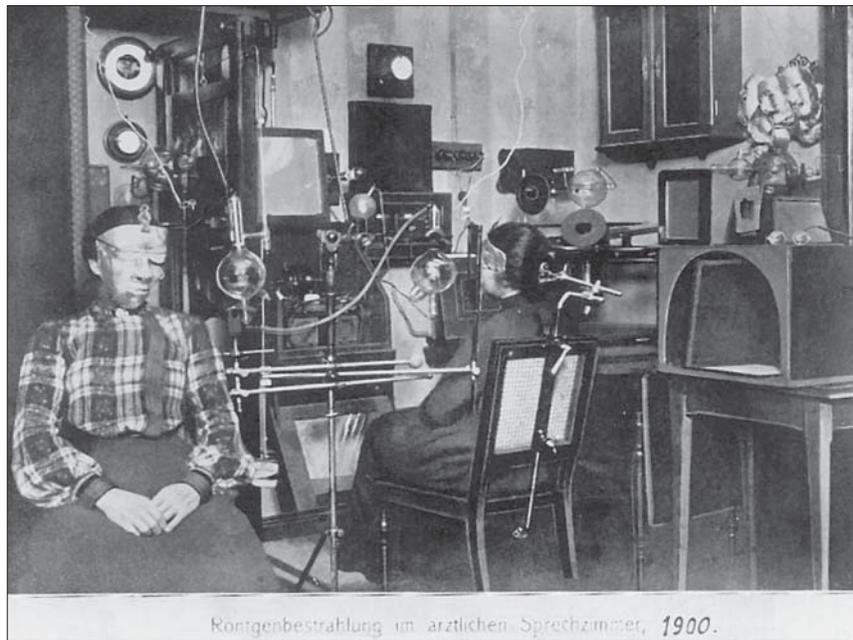


Figure. "X-ray treatment in the doctor's office in 1900." From: *Science and Technology in Medicine: An Illustrated Account Based on Ninety-Nine Landmark Publications From Five Centuries*, by Andras Gedeon. Reproduced by permission of Siemens Medical Solutions Archive, Erlangen, Germany, and the publisher.

The first landmark publication, dated 1528, is by the artist Albrecht Dürer and is cited by Gedeon as the first application of mathematics to description of the proportion and forms of the human body. Dürer studied goldsmithing, then painting, then Euclidean geometry. His travels from Germany to Italy influenced his interest in both mathematics and art theory. Dürer's article, published after his death in 1524, shows the exquisite relations that he developed for human proportion. Gedeon asserts that Dürer's contribution enabled subsequent studies in body mechanics and imaging.

The last landmark contribution, from 1975, is that of scientist Michael Phelps, included for the development of positron emission tomographic scanning.

Why did the author choose 99 publications and not 100? In the preface he predicts that he will be criticized for his selection. He intentionally chose 99 as an invitation to the reader to "... reflect on how the present framework

could be modified according to his or her own knowledge and preference." While medical historians may wish to respond to the author's kind invitation, most readers will appreciate the new and interesting information provided, and lecturers will welcome this aid in spicing up their presentations.

The illustrations add to the already unique content. With three exceptions, each sketch has an accompanying drawing, self-portrait, or photograph of the scientist. When a publication describes an invention, an illustration of it is included. When the landmark concerns a procedure, for instance, Joseph Lister's 1867 contribution to aseptic surgery, the book presents illustrations from the original or subsequent related publications. Chemical formulas, crystals, wave tracings, and plants illustrate other landmark publications. The "In Perspective" sections also have illustrations, for

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instance, a photograph that places Wilhelm Conrad Roentgen's discovery of x-rays in context (Figure). Sources of the illustrations are museums in Berlin, Paris, London, Vienna, and Philadelphia, archives of companies that include Corning, Merck, and Siemens, and prominent scientists. This assemblage of illustrations is a magnificent achievement.

The medical historian will find the book a valuable reference for documenting the multidisciplinary foundation of science and technology that brought advancements to medicine. The busy practitioner may have an initial impulse to place the large volume on the coffee table. But avoid this urge, because *Science and Technology in Medicine* is far more stimulating than other coffee-table books. I suggest displaying it prominently and having it available at departmental social events or gatherings of friends with an interest in science. I predict the book will attract attention, stimulate discussion, and ensure no lulls in conversation.

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Psychiatry, History

Founding Friends: Families, Staff, and Patients at the Friends Asylum in Early Nineteenth-Century Philadelphia, by Patricia D'Antonio, 253 pp, with illus, \$46.50, ISBN 0-934223-82-3, Bethlehem, Pa, Lehigh University Press, 2006.

"MORAL TREATMENT" WAS ONE OF THE first of many waves of reform and innovation in modern psychiatry. Developed initially in Western Europe during the late 18th and early 19th centuries, it was premised on the idea that the afflictions of the insane could be relieved, in part, by strict regulation of their daily routine. The hope was to counter their disorder of mind with external order, as an alternative to more overtly coercive forms of treatment. Although its reputation as a humane and liberating advance over earlier asylum practice has been tarnished by some historians influenced by antipsychiatric thinking, it can be credited for promoting a simple sentiment that has too often been at risk: the mad are people, too.

In *Founding Friends*, Patricia D'Antonio looks closely at the practice of moral treatment in the Friends Asylum for the Insane, a Quaker asylum in Pennsylvania in the early 19th century. She tells the story of the rise and decline of a simile—namely, the notion that the asylum, which functioned in part to relieve families of the burden of caring for their mentally ill members, was itself like a family. D'Antonio, who has many years of experience as a psychiatric nurse, shows that, by the end of the period she examines, this notion was yielding to a new conception of the asylum as a site for medical practice, a conception she calls the "medical metaphor." It could be made clearer why this is a metaphor, and not literally medicine, since physicians increasingly came to manage the asylum. Nevertheless, D'Antonio traces this arc persuasively.

Founding Friends is impressively researched, making judicious use of daily diaries written by asylum superintendents. Details about patients and those close to them are always challenging quarry for historians of psychiatry, and D'Antonio provides revealing glimpses into the moral worlds of the patients, their kin, and their caregivers. In particular, *Founding Friends* amplifies scholarship that has characterized Quaker domesticity as "female empowered and child-centered," an ethos that was in jeopardy in the asylum, despite the simile that animated asylum ideals. Yet families, which in later times might have been relatively passive in their responses to the power of asylums, were in this early period also shapers of asylum practices, giving in many cases highly specific instructions for the day-to-day life and care of their relations. D'Antonio also shows that "social control," a term of criticism in some psychiatric history writing, was an acknowledged goal of this asylum and its supporters—as she puts it, "not a contemptible concept," according to a worldview in which caring and controlling were considered complementary (p 21).

As D'Antonio's story ends, she shows that as the family model of the asylum

gave way to a more strictly medical model, there were real losses. Patients who, under the model of a family, would have been seen as a kind of kin, with all that implies about their essential sameness to the healthy, were increasingly regarded in a more one-dimensional way, as patients only (p 166).

D'Antonio, like any good historian, is primarily interested in reconstructing the past as those who lived in it understood it, but her account nevertheless raises some interesting questions about comparisons with later psychiatric developments. She notes that advocates of moral treatment recognized that the insane had "residual" powers of reasoning, and that they thus could be influenced by rewards and punishments (p 58). This was, then, a form of behavioral therapy. The asylum's managers, though, promoted moral therapy for what they considered organic disorders. In this context, belief in an organic etiology did not lead to the fallacy that only somatic treatments were worth considering.

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Paleopathology

The Archaeology of Disease, by Charlotte Roberts and Keith Manchester, 3rd ed, 338 pp, with illus, \$39.95, ISBN 0-8014-4232-X, Ithaca, NY, Cornell University Press, 2005.

DETAILED SCIENTIFIC INVESTIGATION OF the normal and pathological human remains of past populations is the basis for bioarcheology and paleopathology. In recent times, this scientific approach is increasingly recognized as a source for understanding life and death in ancient times. Such investigations may shed light on how the interactions of humans and their environment influence disease.

The Archaeology of Disease comprehensively describes the current status of paleopathology. A classic in its field, it is written by two renowned experts, Professor Charlotte A. Roberts, a bioanthropologist, and Dr Keith Manches-