

JANUARY

2007

VOL. 48

gradual recognition of the hazards they posed, Dommann largely succeeds, at least for the specific cases examined. Her analysis mainly rests on extensive research in sixteen different federal, cantonal, municipal, clinical, and commercial archives.

After a historiographical introduction, the first two chapters examine the material situation of medical X-ray work. X-ray apparatus was first mobile; next, it was typically situated in separate pavilions or rooms in physics institutes; and then, finally, it was integrated into the hospital itself. The integration of X-ray institutes into hospital buildings was hardly a self-evident process; it required a careful marshaling of finances and political support. A telling detail is that the construction of X-ray laboratories was what first led to the electrification of several Swiss hospitals. Likewise, there occurred a social integration of relevant expertise into the medical profession. In the first ten years after the discovery of X rays, their medical application was often handled by physicists or technicians; thereafter, control of medical X rays increasingly fell to credentialed physicians. Dommann describes the "boundary work" (borrowing the expression from Thomas Gieryn) to establish radiology as a medical specialty with prestige comparable to other specialties, but was also distinguished from the work of physicists and technicians. The third chapter examines the creation of an "expert culture" within the laboratory and, specifically, the mutually defining, increasingly hierarchical, and often pointedly gendered roles of physician and nurse.

Part 2 deals with the appropriation of the images produced by X rays. Once again, the author shows how problematic these images were, despite their nearly iconic status. Among other things, the fact that the images are of the *shadows* of X rays makes them tricky for eyes used to looking at images produced by *reflected* light. Over several decades, increasingly standardized techniques in the production and interpretation of X-ray images were created, culminating in campaigns in several Swiss cities during the 1930s and 1940s to screen the entire population (or a substantial portion thereof) for tuberculosis.

The third part of the book relates examples of confrontation with the hazards of X rays, Dommann providing intriguing local color for the Swiss case of a well-known story. Professional pride, as well as notions of sacrifice or martyrdom for the scientific profession, led to inertia or even resistance to official, public response to the hazards of X rays. Only in 1963, in the context of the cold war, did political pressures lead to a legal codification of safety regulations. Dommann also relates the Swiss version of the story of the pedoscope for sizing shoes, showing how its use correlated with efforts to market mass-production shoes as "hygienic."

The book has its limitations. At times it strains too hard to frame its material within a quasi-canonical set of prior science and technology studies; and the universality of some of Dommann's conclusions—the hegem-

Durchsicht, Einsicht, Vorsicht: Eine Geschichte der Röntgenstrahlen, 1896–1963.

By Monika Dommann. Zürich: Chronos, 2003. Pp. 447. SFr 44.

Despite the broad title, Monika Dommann's main focus is rather specific: the introduction of X rays into medical practice in German-speaking Switzerland during the first few decades after 1895. Within these boundaries, she has produced a complex yet clear analysis of the material and social transformations that both allowed for and resulted from the medical use of X-ray technology.

Inspired by Bruno Latour, Dommann aims to open the "black box" of medical X rays and problematizes how a now-almost-taken-for-granted routine came into being. In three sections dealing with the physical and social space of X-ray laboratories, the visual images they generated, and the

ony of physicians over physicists in controlling X-ray laboratories, for example—might require further discussion in other contexts, for example in biophysical research as opposed to the clinical setting. These quibbles aside, however, Dommann's multilayered, detailed analysis has successfully opened up the black box of the early years of medical X-ray technology for the locations she considers. Lastly, this book is handsomely produced and illustrated.

RICHARD H. BEYLER

Dr. Beyler is associate professor of history at Portland State University in Oregon, where he teaches courses in the history of science and modern European history. His current research project is a study of biophysics in Germany during the 1920s and 1930s.
