

and novices in the study of scientific instruments. The outcome of this interaction was that a cardboard model of a navicula (a small portable sundial, shaped like a ship, which can be used at any latitude) provided the group with a very plausible explanation for what had to that point been an obscure passage in a text about this instrument. And when, at an auction on 30 October 2002, the Whipple Museum acquired a sundial bearing a Rojas projection, with a series of instructions in Latin, the group's efforts to translate this led them to realize that part of the instrument (a slender pointer on the sliding cursor) was missing. The subsequently completed instrument again inspired a correct translation.

"Despite all their recent talk of the importance of 'material culture,' concludes the Latin Therapy Group in its delightful contribution to the anthology, "historians of science outside the domains of technology and museums have rarely paid close attention to the nitty-gritty of the production, distribution and uses of instruments; and, though there are splendid exceptions, historians of instruments and technology have tended to concentrate all too exclusively on the nitty-gritty. A further and equally unfortunate division within the history of science is that between the producers of critical editions and translations of sources, and those who base their historical narratives on those sources, all too often treating the sources as 'given,' as the unproblematic fruits of the exertions of expert under-labourers" (p. 281). Merely absorbing this message makes reading the Whipple anthology a worthwhile activity.

DIRK VAN DELFT

Charles Thorpe. *Oppenheimer: The Tragic Intellect.* xvii + 384 pp., illus., bibl., index. Chicago: University of Chicago Press, 2006. \$37.50 (cloth).

Historical studies on J. Robert Oppenheimer have not yet quite approached the scale of the Darwin or Einstein "industries," but the American physicist's centenary in 2004 has coincided with a remarkable outpouring of excellent scholarship on his life and times. Most prominently, Kai Bird and Martin Sherwin's 2005 biography, *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* (Knopf), won both critical and popular acclaim as a captivating chronicle of its subject. Charles Thorpe's *Oppenheimer* is a quite different book, yet it provides a worthy and even necessary complement to the Pulitzer winner.

Thorpe, a scholar in science and technology

studies, calls his book a sociological biography that aims to account not only for Oppenheimer's life but also for "the making of social, institutional, and cultural forms" that both shaped and were shaped by Oppenheimer's actions. Thus, in contrast to the predominantly narrative form of the Bird and Sherwin volume, Thorpe's is much more analytical, aptly deploying a number of dialectical concepts such as individual identity and collective norms, charismatic leadership and collaborative fashioning, vocational duty and broader social responsibilities, to explain Oppenheimer's views and behavior from childhood to the atomic bomb. Although original archival research and oral history interviews are an important part of the book, its strength is not in adding new biographical detail but, rather, in situating Oppenheimer at "a nodal point at which competing cultural tendencies converged and intersected" (p. 18).

Oppenheimer emerges from Thorpe's study as a tragic figure, not only in terms of his persecution during his infamous security clearance case in 1954 but also in the sense that he lived a life of contradiction: even though he held an idealistic view of the potential of science, he eventually adopted a "soldierly ethic of duty," driven in part by a profound psychological insecurity, toward the military leadership during World War II and the national security state during the ensuing Cold War (p. 197). In one of the most riveting chapters (Ch. 4) of the book, Thorpe details how Oppenheimer (and others) used scheduling as a way to discipline the Los Alamos laboratory toward the goal of delivering an atomic bomb, brushing aside moral and political questions as a waste of time or worse. In an October 1944 letter to General Leslie Groves, military leader of the Manhattan Project, Oppenheimer denounced "the fallacy of regarding a controlled test as the culmination of the work of this laboratory" (p. 149).

In many ways, Thorpe is more critical than Bird and Sherwin in evaluating Oppenheimer's actions and influence, especially during the postwar years. For example, in November 1945 Oppenheimer declared in his famous farewell speech at Los Alamos that it was "good" for scientists to make discoveries and "turn over to mankind at large the greatest possible power to control the world," because it was in the nature of science and because that power might bring forth "a new spirit in international affairs." While Bird and Sherwin regard the speech as a warning against American unilateralism, Thorpe sees it as an attempt to justify the making and use of the atomic bomb and "a defense of the administration." By appealing to scientists to

focus on their apolitical “vocational ideals,” Oppenheimer, according to Thorpe, helped make science a neutral instrument in service to the American Cold War strategy (pp. 177–178).

Likewise, in examining the H-bomb debate, Thorpe faults Oppenheimer for his failure “to sustain a principled rejection of the H-bomb” and for advocating, instead, the deployment of tactical nuclear weapons as an expedient alternative (p. 199). Unfortunately, Thorpe does not explore in more depth why, given his identification with the national security state, Oppenheimer would oppose the H-bomb in the first place. (The book mentions Oppenheimer’s remnant faith in arms control and the influence of James Conant only in passing.) Did Oppenheimer oppose the H-bomb, for example, in part owing to his “misplaced pride about the device he was responsible for producing,” as his rival in the debate, Edward Teller, claimed (Teller, *Memoirs* [Perseus, 2001], p. 372), or was this explanation more revealing about Teller’s view toward the H-bomb than Oppenheimer’s toward the atomic bomb? In any case, Thorpe’s analysis of Oppenheimer’s thinking in this period suggests that his opposition to the H-bomb on moral and political grounds may have been an aberration rather than an exemplification of his views on the proper—and narrow—role of scientists in matters of policy. Ironically, however, it was this incident that became a key element in Oppenheimer’s 1954 security case, leading not only to the denial of his clearance but also to the official discrediting of a broader social and political role for scientists—which Oppenheimer had actually been somewhat uneasy with.

Thorpe’s analysis of Oppenheimer’s later years suggests a further irony: Oppenheimer, as an anti-Communist liberal intellectual, underwent a conservative, not radical, self-refashioning following his humiliating 1954 security case. A believer in cultural elitism, he became deeply involved in the Congress of Cultural Freedom (secretly funded in part by the CIA), which sought to promote liberal pluralism in the world; he was wary of Einstein’s open criticism of McCarthyism; and he lamented the fragmentation of American culture and society during the Vietnam War era. Like many other American scientists, Oppenheimer had faith in the identity of the ideals of science and of American democracy; but he could not reconcile the liberal vision of science with its potential for mass violence, as represented by Hiroshima and Nagasaki.

Overall, *Oppenheimer* is a refreshingly critical analysis of both the physicist’s life and the gradual integration of science into the apparatus of the state that he facilitated. While not everyone will agree with Thorpe’s sometimes harsh

critique of his subject, most will find the book thoughtful and well written, built on rich sources, cogent arguments, and original insights. Like the works of Steven Shapin, Thorpe’s former mentor at the University of California, San Diego, and others, this book demonstrates once again the promise of sociologically informed historical studies of science and technology.

ZUOYUE WANG

Keith Wailoo; Stephen Pemberton. *The Troubled Dream of Genetic Medicine: Ethnicity and Innovation in Tay-Sachs, Cystic Fibrosis, and Sickle Cell Disease.* x + 249 pp., index. Baltimore: Johns Hopkins University Press, 2006. \$21.95 (paper).

The title of this book is not very informative about its content. Its main objective is to contrast the therapeutic approaches successively proposed during the last forty years for three major genetic diseases: Tay-Sachs (TS) disease, cystic fibrosis (CF), and sickle cell (SC) disease.

This objective is not fully original, since it is very close to that of Troy Duster’s *Backdoor to Eugenics* (Routledge, Chapman & Hall, 1990). However, new information has been included because of the time elapsed since this earlier publication: for instance, the description of new treatments for SC disease, both bone marrow transplantation and drugs such as 5-azacytidine and hydroxyurea; and discussion of the problems raised by the extension of the strategies used to reduce the incidence of TS disease in the Jewish community to other, less severe, genetic diseases. The case of CF, with the hopes and disillusionment resulting from the first attempts at genetic therapy, was also absent from Duster’s book.

The central argument is also different. Whereas Duster positioned the new therapeutic approaches in relation to the eugenic objectives of the past, Keith Wailoo and Stephen Pemberton aim to demonstrate that, in the case of each of these diseases, different historical experiences shaped the sensibility, representations, and attitudes of the different groups involved: patients, doctors, associations, the public, industrialists. The main factor was the position, real or imagined, that the three ethnic groups mainly affected by these diseases—Jews in the case of TS, “white people” for CF, and African Americans for SC—have within American society.

The Troubled Dream of Genetic Medicine offers interesting information and pertinent discussions on the reasons for the successes and