Science & Technology

HEALTH, RACE AND GERMAN POLITICS BETWEEN NATIONAL UNIFICATION AND NAZISM, 1870–1945. *By Paul Weindling. Cambridge. 641 pp. $69.50*

Most accounts of Nazi medicine and biology read like demented Wagnerian librettos. By contrast, Weindling, a historian of science at Oxford, serves up a thorough, even dry analysis of those aspects of a biomedical system that may seem acceptable to many upwardly mobile, middle-level medical administrators today. Weindling tells how German scientists modified their language or research to meet official requirements. In their behavior, they appear quite similar to the agents of universities who now haunt the corridors of funding agencies to determine what sorts of proposals will receive support. It is not the methods or morality that appear strange in Germany's case. But the science was.

During the late 19th century, many German scientists misread Darwin and developed what seemed a legitimate program for improving the fitness of the German race. Where Darwin studied natural selection among individual organisms and biological species, they focused instead on classes, races, and nations, as if they were species too. After the unification of Germany in 1870, both scientists and government officials promoted eugenics to prevent the degeneration of the Germans: Alcoholism, criminality, tuberculosis, and falling birth rates were all assumed to be due to heredity. This assumption compelled health authorities to take as their primary patient the state and the *Volk*. Anti-Semitism, distaste for dark people, and even dislike of East European Slavs were viewed not as prejudices but as sound science.

Weindling shows that "German science" was fully in place before the Nazis took power. The Weimar government (1919–1933) ordered the sterilization of all German children of the French-African soldiery who had occupied the Rhineland after World War I. Hitler only seconded this mandate. Although the Nazis appointed eugenicists to university and governmental posts, these specialists had earlier been favored under the Weimar government (and many of them, Weindling shows, would be reappointed under the post-World War II Bonn governments).

Karl Von Frisch, the lovable discoverer of the "language" of the bees, and Konrad Lorenz, who wrote the bestselling *King Solomon's Ring* (1952), both taught in America after World War II. They charmed American students and won Nobel Prizes. Earlier, however, Lorenz had joined the Nazi party when Austria was swallowed up by Germany, and Frisch had dedicated the profits from his popular biology text to the benefit of the Goebbel's Military Fund. Most of the scientists discussed by Weindling were, like Frisch and Lorenz, ostensibly motivated by a strong ethical urge, often derived from their skewed readings of Darwin, and by their own personal ambition. And, quietly, horror became acceptable: "What is wrong with taking blood samples from people [concentration camp inmates] who are already condemned to death?" asked one professor in all sincerity.

MULTIPLE EXPOSURES: Chronicles of the Radiation Age. *By Catherine Caulfield. Harper & Row. 304 pp. $19.95*

In 1895, the German physicist, Wilhelm Roentgen, discovered "a new kind of Ray" that passed through wood and flesh but not through certain metals or bones. Roentgen named it an x-ray, the *x* standing for mystery. Within months, reported the *Electrical Review*, the public was in the grips of a "Roentgen mania." Farmers even mixed radium with chicken feed to try to make hens lay hard-boiled eggs. Thomas Edison jumped on the bandwagon, but his assistant, Clarence Dally, who did the actual work on the x-ray light bulb, had to have both hands amputated before dying at age 39, the first "martyr to science" in the field of ionizing radiation.

Caulfield, a science journalist, argues that the scientific establishment has been careless in protecting workers (and others) from the devastating side effects of the "peaceful atom." During the 1930s, scientists tried to establish safety standards. With the outbreak of World War II, however, the pursuit of the atom bomb overshadowed health concerns. The U.S. government conducted atomic tests in remote