IN THE BEGINNING

An Introduction

The earliest glimmering of radioactivity's promise long predated any sense that ours would be the Atomic Age. By the time of the Manhattan Project, physicists had almost a half-century of experience with radioactive elements and their radiation, and several such elements, most notably radium, had been used since the turn of the century in efforts to treat human disease. By the 1930s, radioactive isotopes were being produced artificially in Berkeley's cyclotrons, and the pace of medical use and biological experimentation increased dramatically. At the same time, even the earliest pioneers saw that radioactivity was not a benign blessing; protection standards, albeit far from adequate, were published as early as 1915. Nonetheless, it was World War II that firmly thrust the nuclear genie onto the public stage. At first, the spotlight was on the awesome power of the atom, then on the emerging promise of nuclear energy, but splitting the atom would also herald a vital new era for biology, medicine, and environmental research.

Even during the war years, biological research was a priority. A Medical Advisory Committee chaired by Stafford Warren developed health and safety policy for the Manhattan Project and inaugurated research programs to assure adequate protection for Project workers. Teams of physicians, biologists, chemists, and physicists worked to learn how radiation affected the body, what protective measures were most effective, and in the event of mishap, what methods of diagnosis and treatment were best.

At the war's conclusion, recognizing the opportunities of atomic energy—and acknowledging, too, an obligation for public safety—the Congress passed the Atomic Energy Act of 1946, which would transfer responsibility for atomic energy research and development from the War Department to an independent civilian agency, the Atomic Energy Commission. On January 1, 1947, the AEC thus took charge of research programs in health measures and radiation biology conducted in government facilities at the Clinton Laboratories (now Oak Ridge National Laboratory), Hanford, and Los Alamos; at the Metallurgical Laboratory at the University of Chicago (now Argonne National Laboratory); and at many university laboratories, large and small. Among the ongoing efforts were health physics research for "improving our knowledge of the potential dangers presented by fissionable materials, reactors, and fission products and for proposing methods of elucidating or circumscribing such dangers"; research aimed at extending our "fundamental knowledge of the interaction of nuclear radiation and living matter"; and radioisotope distribution programs to "provide indirect aid to