

EPILOGUE

The 1942 CP-1 chain reaction experiment marked the culmination of a process of European scientific discovery and American technical development in nuclear physics research that dated back to 1934, when Enrico Fermi split the atom without realizing it.

In this sense, the final success of the Metallurgical Laboratory was almost anticlimactic. The legendary bottle of Chianti produced by Eugene Wigner and signed by all the participants was actually purchased a year before the successful experiment was completed.

Nor was the success of CP-1 especially decisive in pushing the Manhattan Project forward. A visiting committee of scientists and engineers had already recommended continuing the pile project before they arrived in Chicago on December 2, and a day earlier General Leslie Groves, director of the Army project, had written the du Pont Company a letter authorizing design and construction of the massive Hanford, Washington, plant to produce plutonium, using the pile project as a prototype.

In this context, the famous telephone call from Compton to Conant takes on a different meaning. Conant, an enthusiast of Ernest Lawrence's project to separate electromagnetically U^{235} from U^{238} as the quickest route to the bomb, remained skeptical of the pile approach, and criticized the visiting Lewis committee report for pushing the pile project toward a full-scale plant. In telephoning Conant, Compton was not only conveying a secret message, but advocating a particular route to the new weapon.

On December 28, 1942, President Roosevelt approved the report from Vannevar Bush of the Office of Scientific Research and Development calling for an all-out effort to build an atomic bomb with private industry working under Army supervision. In this crucial decision CP-1 had played an important part. For it had transformed scientific theory into technological reality, and demonstrated that an awesome new form of energy had been harnessed to man's purposes.

In early 1943, following the success of CP-1, work on the production piles shifted to new plants springing up at Oak Ridge, Tennessee, and Hanford, Washington. The scientists of Chicago gave way to the engineers of du Pont, and the major work of the Manhattan Project moved away from that city.

In February 1943, Groves ordered Fermi's pile moved from Stagg Field to Site A, a 20-acre area of the Argonne Forest Preserve south of Chicago, where it was reassembled as CP-2. CP-2 was considerably larger than CP-1, and had a five-foot concrete shield build around it to avoid radiation exposure to staff.