

changes that they developed, and they represent a very small sample out of the several thousand persons presumed to have been so treated by their doctors.

The second article of interest in this final report was a transcription of a series of letters written by Arthur L. Miller to Rose in 1959. Miller had worked from 1914 until 1929 for the Standard Chemical Company, where he was involved in the final extraction and purification of radium. He apparently was involved in the preparation of some 45 g of radium. His letters provide a colorful description of the process of radium preparation in the first U.S. plant to successfully mine, extract, and prepare radium for the market.

The first joint report with the Argonne Cancer Research Hospital, dated January 1969 (Argonne 1969a), was a summary in a database format of 454 radium cases. The following statement is from the introduction to that report:

For the past 20 years a continuing investigation of the long-term effects of radium deposition has been conducted at Argonne National Laboratory and Argonne Cancer Research Hospital. These studies were expanded greatly in 1957 after the discovery of a photograph of 98 dial painters taken in August 1924. The identification and tracing of these and many other persons occupationally exposed to radium, along with those iatrogenically exposed, made possible the collection of a substantial body of data regarding exposure, radium body content, retention patterns, and the medical consequences of such exposure. . . .

The corpus of information condensed and summarized in this report represents an information retrieval dated January 1, 1969. The material summarized here has been developed primarily by the present investigators. Some information gathered on these same patients by other investigators . . . has been included, along with some more recent data from autoradiographic and micro-radiographic analyses of bone specimens . . . and radiochemical analyses of bone and teeth. . . .

The determinations of radium body content were made principally by Charles E. Miller, utilizing the human gamma-ray spectrometer of the Argonne National Laboratory Health Division and the measurement techniques that he developed. . . .