

Thus, the bone metabolism study led to the first Argonne exhumation in a radium case. On October 13, 1959, the body of an Elgin State Hospital patient, Case 03-140, was exhumed. This individual had been injected with radium in 1933 and had died in 1937 at 32 years of age. Autoradiography revealed that both the hot-spot and the diffuse distributions were smoother and more uniform than in fresh bone samples. The conclusion was that the embalming process led to a leaching and redistribution of radium in bone after burial. Thus, although exhumations might be useful for determinations of total body radium, they were not useful for microscopic bone studies. Quantitative autoradiographic studies of radium in bone would have to depend upon well-preserved bone samples. Exhumation, however, proved to be valuable for the study of radium cases, and ultimately more than 100 exhumations were performed.

In this period little progress was made in finding and measuring additional radium cases. Two dial painters and one individual who had received therapeutic radium were remeasured in 1956. Two more measurements were made on dial painters in the first half of 1957. Also in 1957, levels of ^{137}Cs in 11 Central and South Americans were measured for comparison with levels in North Americans. (Levels were lower in the Central and South Americans.) In addition, seven inhabitants of the Marshall Islands were counted to examine their levels of fallout fission products.

Thorium was another radioactive element of interest, particularly to Marinelli. In 1957 the first worker from a nearby thorium refinery was brought in for measurement. He contained about 50 mg of ^{232}Th , indicating that a study could be made of employees from this plant. In addition, a patient injected with Thorotrast in 1939 was studied. Other radionuclides measured during this period were ^{235}U and ^{233}Pa . However, very few new radium cases were measured.

The New Jersey Radium Research Project

The New Jersey Radium Research Project (NJRRP), in the New Jersey State Department of Health, was initiated in November 1957 as a feasibility study and was designated an ongoing epidemiologic study in March 1958. This project was funded by a contract from the Division of Biology and Medicine of the AEC.

For its first three years, the efforts of the NJRRP were directed toward the identification and location of former dial painters and radium workers in New Jersey and the metropolitan areas of New York City and Philadelphia. In subsequent years the project concentrated on the collection of medical, dental,