

multiplicity is most often of the successive type, less frequently of the simultaneous variety. The occurrence of multiple tumors is as a rule systemic and restricted to the skin of the fingers, hands and wrists. Hesse stated that the appearance of 4 to 6 roentgen-carcinomas in one individual was not rare. Tumors of hands and fingers of both sides were observed in 13 cases. The 2 cases of alleged roentgen-carcinoma of the mammary glands were bilateral tumors (Depenthal; Vigdortschik). In the case reported by Depenthal neoplastic lesions affecting the fingers of both hands preceded the appearance of the mammary malignancies. Multiple cancers involving the hands and fingers, and other parts of the body, such as back, chest, cheek, nose, and ankles were found in 13 cases. One roentgenologist developed more than twenty cancers, while one engineer had approximately one hundred cancroids scattered over the trunk, hands, forearms, forehead and temple.

The 3 occupational radium-cancers affected the fingers and hands (in 1 case both sides, in 1 case each right or left side, respectively).

VII. OCCUPATIONAL DISTRIBUTION

The occupations followed by the roentgen-cancer cases are known in 87 instances; 61 belonged to the medical profession (physicians, dentists, roentgen-assistants, laboratory technicians, nurses, medical roentgen-photographers) and 26 were engaged in the production and sale of roentgen-tubes and apparatus (engineers, physicists, mechanics, technicians, and salesmen).

The following table presents details of the occupational distribution of roentgen- and radium-carcinomas of the skin.

OCCUPATIONAL DISTRIBUTION OF ROENTGEN- AND RADIUM-CANCERS

Medical Group Cases		Technical Group Cases	
Physicians, Dentists	50	Engineers, Physicists	8
Nurses, Technicians	11	Mechanics, Salesmen	18
Total	61		26

It is interesting to note the shifts in the professional distribution of roentgen-cancer which have taken place in the course of the past 40 years. During the early period, when neither the manufacturing group, that is, the roentgen-engineers and mechanics nor the medical group, that is, the physicians, technicians and nurses used any or very defective and inefficient precautions and therefore received rather massive exposure to relatively soft rays upon the hands, arms and face, both groups contributed comparatively equally to the number of roentgen-cancers. In a compilation prepared by Dean in 1908 com-