

been published for factories which had been conducted, over a longer number of years, with special technical and sanitary precautions (introduction of a closed production system that eliminates contact with vapors, fumes and dust; extensive exhaust ventilation; careful supervision of repair work; good medical care) (Nassauer; Simon, 1930). Simon mentioned in 1932 that in the report of the German Dye Trust only 21 cases of injuries from nitro substances and amino substances were recorded, adding that he had not seen any new cases of aniline tumor in the last four years. Gehrman noted that, according to information which he had received from a German plant operating on a closed production system, no new cases had been observed there in the last fourteen years among new workers employed in that time, a remarkable result in view of the period of latency of these tumors.

While it is likely that isolated cases will continue to occur even under the best technical conditions, the frequent, even epidemic-like appearance of cases among the workers of some plants during recent years seems to suggest that the methods of production and the precautionary methods practised in these factories have not conformed with the requirements recognized as necessary from the technical, chemical and medical standpoints. There are still 5 to 6 new cases a year in Germany, according to Staemmler, where the control measures, from the information available, are not only the most thorough and extensive so far undertaken anywhere, but have been in operation over a longer period than in any other country.

While the coal tar dye industry provides by far the chief source of occupational bladder cancers through the contact with dye intermediates (aromatic amino-, and nitro-compounds) and to a lesser degree, with the finished products (dyes) (Maisin), there exists clinical as well as statistical evidence suggesting also that workers of various other trades exposed to pitch, tar, soot, and crude paraffin may be affected by this industrial neoplasm. Analyzing the death certificates of England and Wales for 1921 to 1928, Henry, Kennaway and Kennaway found records of 5621 cancers and 974 papillomas of the bladder in males and 1411 cancers and papillomas of the bladder in females. When the incidence of death from bladder cancer in the general population was taken as 100, there were 15 out of 46 occupations listed which had a score above 150. In five and possibly eight of these fifteen occupations, there was an exposure to coal gas, tar or pitch, in one to lubricating oil and in two to tobacco. The scores in these groups were as follows: patent-fuel workers, 400; gas works engineers, 400; tar distillery workers, 333; cellarmen, 231; lithographic engravers, 231; tobacco manufacturers, 222; gas works managers, 222; gas fitters, 205; brick kiln and oven men, 200; cotton spinners, 198; dyers, 154. Among 65 cases of chimney sweeps' cancer, there was one of the kidney and one of the bladder (Kennaway). Commenting on these studies Burrows, Hieger and Kennaway remarked that the liability to cancer of the bladder in man in certain occupations, in which the incidence of skin