

named "scaldino" is used in Italy, no instance of cancer resulting from its use has been recorded as yet (Henry, 1930).

From Australia, Hunt (1933) reported the occasional occurrence of cutaneous epitheliomas among the tar workers employed at road construction and maintenance. The reason for the low incidence of this industrial neoplasm in Australia is presumably the general use of a vertical-retort tar possessing a low carcinogenic potency. Especially in the northern and southern regions of Africa where large cities and extensive modern industrial establishments and road constructions are found, no data are available concerning the incidence and existence of tar cancer in Africa.

The recorded occurrence of tar and pitch cancer from the Americas has been restricted to the United States. From this country Schamberg described 5 cases of cutaneous epithelioma in tar workers after (1910) Lueke briefly mentioned in 1907 the occurrence of epitheliomas in carbon workers. Stengel and Austin placed a sixth case on record in 1916. When Wood conducted 13 years later a survey of gas works (6), briquette plants (5), and coke by-product plants (6) in Pennsylvania (1929), he could not find a single instance of cutaneous malignancy caused by tar or pitch and only an occasional instance of tar or pitch warts among the workers employed in the plants investigated. The value of this observation is impaired seriously as the majority of the workers examined had only been employed in these operations for a few years (1 to 3) and, therefore, had not been exposed sufficiently long to respond with any cancerous reactions in case an exposure to suitable agents had been present.

A similar investigation was made by Heller (1930), who reported negative observations regarding the occurrence of skin tumors among the workers of gas plants of various large cities (New York, Philadelphia, Chicago, Pittsburgh, and Milwaukee) as well as among the employees of coke-oven plants, briquette factories, tar distilleries, and tar roofing paper factories.

Heller, however, noted one exception, a plant in Cleveland engaged in the manufacture of carbon black and dry battery cases. There had occurred over a period of ten years preceding this survey a total of 21 cases of cutaneous malignancy (19 pitch cancers, 2 tar oil cancers) in this establishment. Fifteen of these cases were caused from exposure to gas-works pitch, while four cases resulted from contact with coke-oven pitch. Heller claimed that the scarcity of tar and pitch cancer in the United States was attributable to the fact that, in general, the less dangerous coke oven tar is used while the more carcinogenic gas house tar is only employed as an admixture to the former. It is unfortunate that Heller did not apparently investigate the workers of the gas plants and coke ovens, which produced the carcinogenic tar responsible for the cases observed in the Cleveland factory. In addition to the cases seen in Cleveland, Heller found 12 recorded instances of tar cancer observed at the Memorial Hospital in New York between 1920 and 1927, and seven more cases of this same