

benzene, toluol, xylol, purine, chrysene, phenol, alpha- and beta-cresol, xylenols, pyrocatechin, pyridine, quinolines and sulfur compounds (Ross).

Asphalt is the residue of the distillation of asphaltic, paraffin poor or paraffin free types of petroleum. This residue is also known under other names, such as tar, pitch, goudron, mazoute. A coke-like substance remains from the distillation of a crude mineral oil rich in paraffins. Asphalt is used for road construction (macadam roads); oiling of gravel roads for dust prevention; admixture to cement; water-proofing of walls; roofing, manufacture of storage batteries, wall boards, flooring, sheathing, lacquer, paint, varnishes, enamel, cement, moisture proofing of wrapping paper, insulating products, moulding composition, impregnation of shingles; as an addition or substitute in the rubber industry; and as asphalt oil, as a remedy of sheep eczema. The hard goudron is often mixed with high boiling mineral oils or softer petroleum asphalt.

II. HISTORICAL AND GEOGRAPHICAL ASPECTS

The first case of occupational tar carcinoma of the skin was described by Volkmann in 1876 in a worker employed in a tar distillery located in the lignite district in the neighborhood of Halle, Saxony. While the subsequent cases of occupational cancer reported from this industrial district were related to the production of paraffin obtained through the fractionation of the lignite tar, the rapidly growing industrial development of Germany with its establishment of coal tar plants, coke ovens, briquette factories, and numerous other industries using tar and pitch in the manufacture of their diverse products, furnished during the following decades many new and more extensive opportunities for an occupational contact with tar and pitch and for the occurrence of industrial cutaneous neoplasms caused by these substances.

The second case of occupational tar cancer in Germany, was not placed on record until 33 years later by Zweig, who observed three cases of multiple tar papillomas in workers exposed to hard coal tar. A scrotal manifestation in one of these men proved to be malignant.

In 1911, Rambousek mentioned the occurrence of cutaneous cancer, especially affecting the scrotum, in hard coal tar workers. The rarity of anthracite tar cancer among German workers was emphasized by Leymann, who attributed this scarcity to the fact, that in the anthracite briquette plants in Germany (Upper Silesia) elaborate technical and sanitary precautions were long ago effected (1896). This investigator conceded, however, that tar and pitch dermatitis continued to occur among the workers employed in briquette plants and related occupations (stokers of railroad and ship engines, workers in corkstone factories in Upper Silesia as well as in the Rhenish-Westphalian industrial district). Four cases of tar cancer in coke-oven workers were added by Leymann to the German list of these neoplasms. Their actual number was apparently at that time (before 1917) already much greater, as this investigator mentioned that during a period of 5 years there had occurred in Germany