

chymatous derivation, and moved in them actively or passively to distant regions. The physico-chemical properties possessed by various agents, such as fat solubility, chemical affinity to sulfur compounds and phosphates, determine the organs and tissues in which they may become finally deposited and concentrated, and in which subsequently neoplastic responses may be elicited, whenever carcinogenic agents are involved.

2. FIBRILLAR CONNECTIVE TISSUE

A. CHEMICAL AGENTS

None of the various chemical agents which cause industrial neoplasms has been found to be involved in the occurrence of benign and malignant blastomas, originating from the common areolar connective tissue. This observation does not indicate that this tissue is refractory to the carcinogenic stimulus exerted by these substances. Abundant experimental evidence exists supporting the fact that some of these compounds as well as chemically closely related substances are well capable of eliciting such responses in animals.

Borst reported the development of a huge fibroma in the ear of a rabbit, which had been painted alternately with paraffin oil, tar and beta-naphthylamine solution following traumatization. An epithelial papilloma complicating this mesenchymatous tumor became ultimately malignant. Somewhat similar observations were made by Korényi, who noted in the ear of one out of ten rabbits, following repeated tar applications, the development of two nodes, one being a walnut-sized soft fibroma surrounded by a polymorphous cell carcinoma. Yamagiwa and Itchikawa obtained fibromyosarcomas in the breast of rabbits after intramammary injection of tar and tar dissolved in lanolin. The production of sarcomas in the subcutaneous tissue of rats following the injection of tar was reported by Russell. Löwenthal noted the development of two spindle-cell sarcomas in the diaphragm and in the parauterine tissue, respectively, of two out of 29 mice. These mice were injected intraperitoneally 12 times within four and a half months with the benzol soluble fraction of hard coal tar dissolved in olive oil. Among the teratoid tumors which Murphy and Landsteiner produced in chickens after the injection of embryonic pulp, two became sarcomatous after the introduction of tar. Choldin, who injected chickens subcutaneously with tar, observed in one instance the appearance of a polymorphous cell sarcoma. Similar results were obtained by Peacock; and Sturm and Murphy with subcutaneous injections of tar into chickens. While these neoplasms obtained were not transmissible by cell free filtrates, McIntosh obtained in 1933 four sarcomas in fowls by the injection of tar, three of which were propagated readily with filtrates. The sarcomas which appeared in pheasants after the injection of tar by Andrewes were not of the filtrable variety. When Andrewes, Ahlström, Foulds and Gye injected rabbits intravenously with tar and inoculated them