

In the inert reaction, the dust neither caused an increase in the size of the nodules nor disappeared from the tissues; instead there was more or less a change in its distribution. Soapstone, carborundum (Silicon Carbide), jeweler's rouge (Ferric Oxide), anthracite coal, bituminous coal and certain filter clays have inert reactions. Calcite, limestone, precipitated calcium carbonate, gypsum, and Portland Cement exhibited an absorption reaction. Quartz, chat, certain filter clays and flint produced a proliferative reaction.

The physiological response to the injected dusts were found sufficiently well marked in 90 days to determine the type of reaction, particularly where the reaction was one of absorption or proliferation. Since the reaction elicited by dust was constant and uniform in all of the animals injected with the dust, it is believed that this response of peritoneal tissue to various dusts can be used as a test to determine the possible harmfulness of industrial dusts.

The fibrosis-producing properties of a Georgia filter clay (30-60 mesh grade) a sample of American contact clay and a German contact clay were tested by the Intra-peritoneal Method, under the direction of Dr. R. R. Sayers, Medical Officer in Charge, U.S. Public Health Service. The Georgia filter clay showed an inert reaction with a slight tendency towards a proliferation in the 90-day test. The American contact clay showed an inert reaction with evidence of some slight absorption or disappearance of some part of dust in the 180-day tests. The German contact clay caused the formation of light yellowish-brown nodules and as the interval between the injection and the examination increased the nodules became somewhat flattened, but the amount of dust and the approximate size of the nodule remained the same throughout the entire period (90-days) of the test. This can be considered an inert reaction; but as the dust does not disappear from the peritoneum it should be considered as potentially harmful though not as dangerous as pure silica.

In commenting on the results of the tests with the Georgia filter clay and the American contact clay, Doctor Sayers advised that the results of the test indicated that the filter clay is more harmful than the American contact clay because the dust remains inert in the tissues as this was the largest portion of the dust and the inert appearance of the lesions was the most prominent. The modification of the reaction in the filter clay can be attributed to the presence of 5-10 per cent. quartz (Petrographic). Gypsum in the American contact clay may account for the slight absorptive reaction. Doctor Sayers advises that an inert dust, if breathed in sufficient concentration, may be harmful. These tests were made in accordance with the procedure described in Reprint #1608, Public Health Reports, Vol. 49, No. 3, January 19, 1934, pps. 80-89.

The inhalation of dust gives rise to "Pneumoconiosis" a term derived from the Greek pneumon, lungs and konis, dust, and used to designate a pathological condition of the lungs caused by the inhalation of any dust. It includes SILICOSIS, a chronic disease of the lungs caused by the inhalation of minute particles of free silica (SiO_2) dust which produces a permanent incapacitating alteration of the lung tissue; ANTHRACOSIS, the black lung of the miner due to coal dust; ANTHRACO-SILICOSIS, the newest of our mineral dust affections and introduced by the United States Public Health Service as a result of their studies in the Anthracite District of Pennsylvania. This affection is the result of breathing anthracite coal dust that contains silica. The common name for the affection is "Miners' Asthma"; CHALICOSIS, the gray-black lung of the stone-cutter due to stone dust; ASBESTOSIS; in asbestos workers due to asbestos dust; SIDEROSIS, due to breathing dusts of iron ore (The lungs are yellow or red from metallic oxides generally of iron.); BYSSINOSIS, due to cotton particles and vegetable fibre dust, and PNEUMONULTRAMICROSCOPICSILICOVOLCANOKONIOSIS, a special form of silicosis caused by ultra-microscopic particles of siliceous volcanic dust. Silicosis, Asbestosis, and Silico-Anthracosis are the only three forms of pneumoconiosis which require practical attention.