fibrosis. Experimental studies concerning this observation will be reported in a separate publication.

TABLE 16.—*Comparison of Reactions Produced by Long Fiber and Short Fiber Dusts Injected Intratracheally*

Dosage: Two injections of 0.5 cc. of a 5 per cent suspension given two weeks apart. Total dose was 50 mg.

Animals used: Six groups of guinea pigs.

Periods at which animals were killed: 1, 2, 6, 8½ and 12 months after injection.

Mineral	Size of Dust Particles	Results
Chrysotile (Thetford)	Long fiber, 20-50 microns	A distinct fibrosis. Refer to chrysotile (fibrous) unheated in table 14.
	Short fiber, 3 microns and less	No fibrosis. Refer to chrysotile (ball milled) unheated in table 14.
Amosite	Long fiber, 20-50 microns	Typical fibrous endobronchiolitis and peribronchiolitis. Refer to table 15.
	Short fiber, 20 microns and less	Reaction limited to phagocytosis with lymphocytic infiltration of adjacent walls. Short fibers packed inside swollen phagocytes; longer ones free; some coated to form typical asbestosis bodies. At 1 mo. after injection, alveoli contained good-sized giant cells; most phagocytes were within air spaces and had not migrated to walls. At 4 mo., free extracellular fibers had worked themselves into interstitial tissue, where there was extensive proliferation of lymphoid cells and monocytes but no fibrosis. At 8 mo. foreign body reaction with some pneumonitis, no bronchiolitis. Typical asbestosis bodies present.
Crocidolite (Bolivia)	Long fiber, 20-50 microns	Advanced fibrous endobronchiolitis and peribronchiolitis. Refer to table 15.
	Short fiber, 20 microns and less	No fibrosis. At 1 mo., air spaces compressed and largely filled with giant cells packed with dust needles. Walls heavily infiltrated with monocytes and lymphoid cells. At 4 mo., a moderate degree of cellular infiltration of walls; small giant cells packed with dust spicules. At 6 and 8½ mo., masses of giant cells, containing mineral particles, in small bronchi but not in respiratory bronchioles; smaller ones widely scattered in terminal air spaces. Numerous asbestosis bodies. No reaction in connective tissue. No endobronchial proliferation. At 12 mo., many scattered small monocytes packed with dust. No endobronchitis. No peripheral fibrosis. In lymph node, slight reticulosis; no fibrosis.
Anthophyllite	Long fiber, 20-50 microns	Lymphocytic infiltration and giant cells but no definite fibrosis. Refer to table 15.
	Short fiber, 3 microns and less	No fibrosis and practically no asbestosis bodies. At 1 mo., focal collections of dust-filled monocytes and a few giant cells; at 4 mo., some adenomatoid epithelial reaction; at 8 mo., simple pneumonitis with phagocytosis of short fibers; at 12 mo., isolated and sharply localized collections of dust cells inside air spaces about terminal arterioles. Reaction in walls limited to lymphoid cell infiltration. No fibrosis. In lymph node, reaction limited to slight prominence of reticulum.
Tremolite	Long fiber, 20-50 microns	Fibrosis about bronchioles. Refer to table 15.
	Short fiber, 20 microns and less	Simple foreign body reaction. No acute inflammation. No accumulation of dust in or about terminal bronchioles. No endobronchitis. At 1 mo., scattered small giant cells and considerable infiltration of adjacent walls with monocytes and lymphoid cells. At 4 mo., little change except more cellular infiltration of connective tissue. At 8 mo., lymphoid infiltration and thickening of walls about some but not all terminal bronchioles.
Brucite	Long fiber, 20-50 microns	Typical fibrous endobronchiolitis and peribronchiolitis like reaction to asbestos minerals. Refer to table 15.
	Short fiber (made by crushing long fibers with rubber policeman)	Inert type of reaction. At 1 mo. after injection, small monocytes widely scattered through air spaces; focus of atelectasis with lymphoid infiltration of compressed air-space walls. No endobronchial reaction as with chrysotile. At 2 mo., reaction similar to that at 1 mo.; typical asbestosis bodies seen. At 12 mo., small clumps of inactive dust-filled phagocytes; no fibrosis. No reaction in lymph nodes.

Comparison of Long Fiber and Short Fiber Dusts.—With quartz dust it has been demonstrated that the smaller the particles the more