

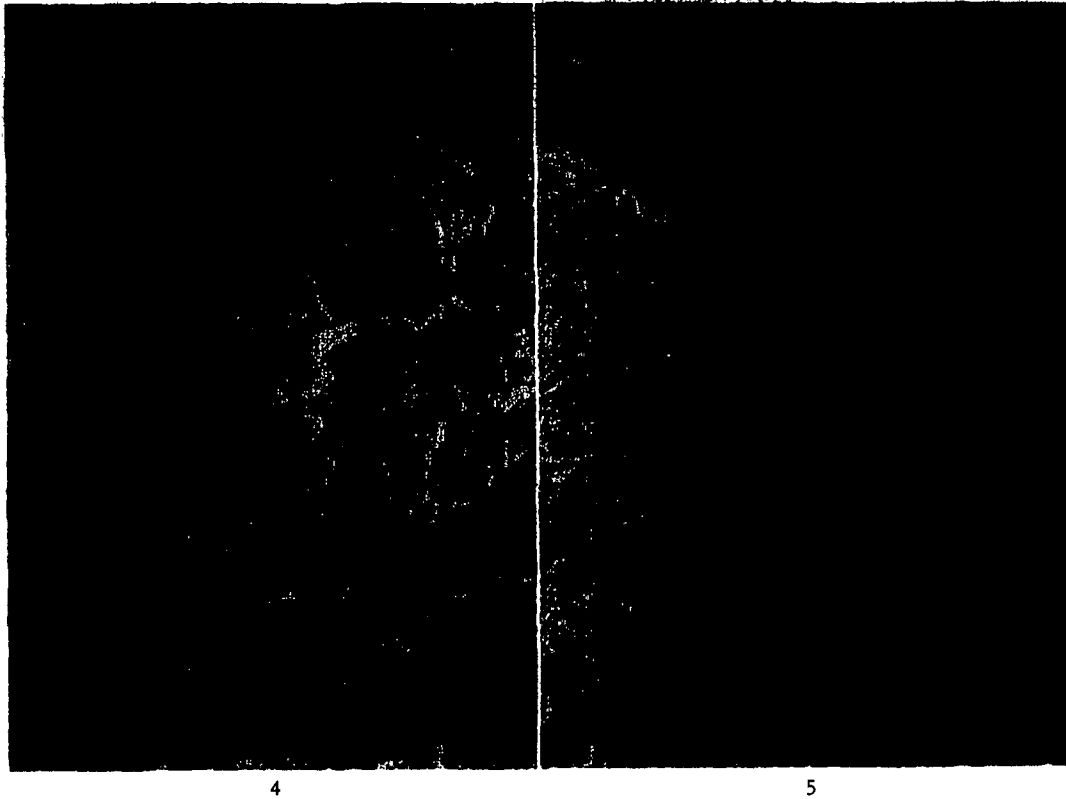


FIG. 4. Squamous metaplasia in the alveolar ducts; note also asbestosis bodies and interstitial fibrosis;  $\times 100$ .

FIG. 5. Adenocarcinoma invading the myocardium;  $\times 100$ .

The lungs were sectioned topographically; sections from all segmental bronchi were taken near the hilum, the mid-lobar and the peripheral areas. These basic histologic patterns could be seen:

**Fibrosis:** Throughout the lungs there was proliferation of fibrous tissue around the bronchi, the arteries, alveolar ducts; the interlobar septa and pleurae were also thickened. There was peribronchial and alveolar duct fibrosis in both apices, and slight alveolar wall thickening as demonstrated by connective tissue stains. The fibrosis increased in the remaining portions of the lungs, was heaviest in the hilar and mid-lobar areas but extended to the periphery. This confirmed the gross impression of diffuse fibrosis.

**Asbestosis bodies:** Asbestosis bodies were present in all sections. (Fig. 3.) These were segmented fibers averaging  $50\mu$  long, some straight and some club-shaped, others resembled dumb bells which stained dark brown on hematoxylin-eosin preparations, and blue on Prussian blue (iron) preparations. Particles of iron-staining dust and larger, easily identifiable asbestosis body parti-

cles, were present in the macrophages. The distribution was equal bilaterally, being slight to moderate in the apical segments, quite marked in the remainder of the lung and occurring with equal intensity in the hilar, mid-lobar and peripheral zones.

While most of the asbestosis bodies were seen in the bronchioles and alveolar ducts, a few could be seen in the alveoli, and fragments were found both in the macrophages and in the lymphatics. Several aggregations of asbestosis bodies were found in the bronchi. Fragmented asbestos fibers were found mostly in the macrophages but occasional iron-staining particles were found free on the alveolar walls. Much, but by no means all, of this material in the macrophages took the iron stain.

**Inflammatory response:** The chief inflammatory cells responding to the irritant were the macrophages. These cells were seen in abundance in every section; they lined up along the walls of the alveolar ducts, filled the lumina of bronchioles and alveoli, and were found throughout the septa and fibrous tissue. Most of these con-