Case Report Section
Asbestosis: Report of a Case*†

E. ROBERT WIESE, M.D., F.C.C.P.** and WILLIAM E. HALL, M.D.§
South Mountain, Pennsylvania

W. E. B., an unmarried, white male, 47 years of age, was admitted to the Mont Alto Sanatorium, May 13, 1953; his chief complaints were weakness, loss of weight and shortness of breath, especially upon exertion. The temperature was 98.0, pulse 100, respirations 30; red and white blood cell counts were within normal limits; he weighed 97 pounds (38 pounds below normal). The family and past histories were not informative except that he had worked in the dusty atmosphere of an asbestos plant for 38 years before the onset of the present illness, in February, 1953. Then he consulted a physician because of annoying cough, weakness, loss of weight and increasing shortness of breath. Three x-ray films of his chest had been taken by the company for which he had worked. The first in December, 1945, showed shadows consistent with approximately second stage asbestosis and some dilatation of the right heart; it was then recommended that he have another x-ray film within eight to nine months but this was not done until April, 1950. This showed in addition to the above findings, evidence of bronchopneumonic type of infection—probably virus pneumonia. It was then recommended that he have another x-ray film within two weeks. In March, 1953 a third film was taken (shortly after he had consulted a physician) and he was told he had asbestosis and should consult a state clinic where arrangements were made for admission to Mont Alto Sanatorium.

While in the sanatorium his general condition improved for a few days more than four months; cough became less irritating, dyspnea less annoying, his appetite improved and he gained eight pounds. Chest x-ray films taken May 13 and July 31, 1953, presented a ground-glass appearance with small nodular mottling throughout and fine reticulate markings in the basal portions of both lungs. Assiduous laboratory work failed to demonstrate acid-fast bodies or asbestosis bodies in the sputum. His condition worsened abruptly during the morning of September 20; he became dyspneic and cyanotic, the pulse jumped to 116, the respirations rose to 36. He was placed immediately in an oxygen tent and proper medication was administered. After a brief period of apparent improvement his condition gradually became worse and he died September 23, 1953.

At autopsy the body was greatly emaciated, the chest was flat and the accessory respiratory muscles were prominently hypertrophied. The lungs were relatively smooth, glistening, sometimes finely puckered, firm and

*From the Medical Department of the Mont Alto Sanatorium.
**Senior Resident Physician, Mont Alto Sanatorium.
§Pathologist, Mont Alto Sanatorium, Waynesboro Hospital and Chambersburg Hospital, Penna.
leathery in consistency and of a peculiar grayish red coloration. A few fine, old fibrous adhesions involved the right apex and the inferior lateral margins of the same lung. The middle lobe of the right lung was missing and was replaced by a single solid lobe occupying the normal space and position of the upper and middle lobes. On deep palpation there was a distinct, peculiar, sensation resembling buckshot felt through a thick layer of rubber or leather. On sectioning the lung substance, in general, presented a deep-red coloration with little normal, spongy alveolar substance. Instead there was a wide spread, sharply demarcated development of fibrosis which at no point presented suppuration, hepatization, cavitation, caseation or indications of tubercle formation.

The heart was of cor bovinum size, shape and form. All chambers were greatly dilated, particularly the right side which was also hypertrophied. The myocardium was uniformly pale and pinkish yellow; the valves were smooth and competent. Atheromatous changes were present in the coronary vessels and the aorta.

Microscopically the picture varied from field to field. In some areas alveoli could be readily identified and were usually characterized by variable dilatation of an emphysematous type, associated with increasing interstitial fibrosis, severe congestion and dilatation of the vessels. In other areas there was extensive and even massive fibrosis reducing the alveolar elements to small dust-like structures. Inflammatory leukocytes were only occasionally identified and played a minimal part; foreign body giant cells, while present, were rarely seen. Throughout the dense, fibro-collagenous areas extensive irregular fields were present in which the collagen had undergone a fine, granular, fibrillar degeneration, that did not, however, develop into true necrosis. Typical asbestosis bodies were found in many of these areas as well as in some of the fibrous tissue areas. These usually were seen well within the stroma but were also found associated with alveolar and bronchiolar elements. Under polarized light fine needles representing the original asbestos fibres were also seen. The fibrosis and massing scarring appeared to be the result of fibrous thickening of the alveolar septae with compression narrowing and ultimate obliteration of the alveolar spaces.

The lymph nodes showed moderate edema and considerable hyperplasia of the reticulo-endothelial cells. A few areas of focal fibrosis, within which a number of small asbestosis bodies were present, were seen.