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POST MORTEM DIFFERENCES IN "ASTHMA" AND IN CHRONIC BRONCHITIS

By

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My interest in pulmonary emphysema started with a study of the lungs of coal miners. In order to get an overall picture I have used a large section technique (*Gough & Wentworth* 1948 and 1960). In previous large section methods such as that of Christeller of Berlin the sections have been mounted on glass and stained. In our technique the sections are mounted on paper and do not require staining. They can be carried and stored like paper documents. Moreover even the largest of the lungs that occur in human pathology can be cut in a single section. From a study of sections of normal lungs the size of the air spaces at different ages can be readily assessed and these preparations are used as standards for comparison with cases of emphysema.

FOCAL EMPHYSEMA DUE TO DUST

It is evident in these sections that a characteristic form of emphysema occurs in coal miners and consists of a dilatation of the air spaces in and around the coal foci. To this kind the name focal emphysema is given (*Gough* 1947). Focal emphysema is a dilatation of respiratory bronchioles and the alveoli in their walls (*Heppleston* 1953). In the miners' lung the interlobular septa also contain dust so that the lobular structure of the lung is much more easily seen than in the normal. The terminal and respiratory bronchioles are at the centres of the

year 1956-57 10% of all men unemployed for more than three months owing to illness were suffering from bronchitis. From the geographical distribution of the deaths from chronic bronchitis it is evident that a main factor in the development of the disease is the part of the country in which the individual lives. Fatal chronic bronchitis is commonest in the densely populated and industrial areas.

If we put together all those chronic lung diseases which we might call bronchitis or asthma or asthmatic bronchitis, then I think that the main difference in our interpretation from that of Dr. Orie is that he would regard the fundamental factor as being constitutional in the individual affected. We would regard the main factor as being environmental. Otherwise we would have difficulty in accounting for the geographical distribution of these chronic chest diseases in England and Wales. Since there are about 27,000 deaths recorded as due to bronchitis in Britain in a year it is important that we should know what the underlying factors are. Bronchitis is however twice as common a cause of death in the large cities than it is in rural areas. Amongst this large number of deaths from chronic lung disease we think there is a specific constitutional condition asthma but this is separable from chronic bronchitis. We regard the latter as due to the circumstances of environment including atmospheric pollution in our cities, smoking and especially cigarette smoking, the prevalence of respiratory infections and perhaps the wet and chilly climate of Britain together with inadequate heating of the houses in winter.

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