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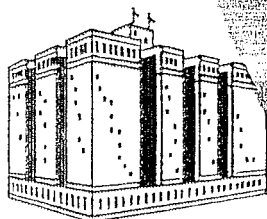
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Pneumoconiosis

National
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OCTOBER 1956

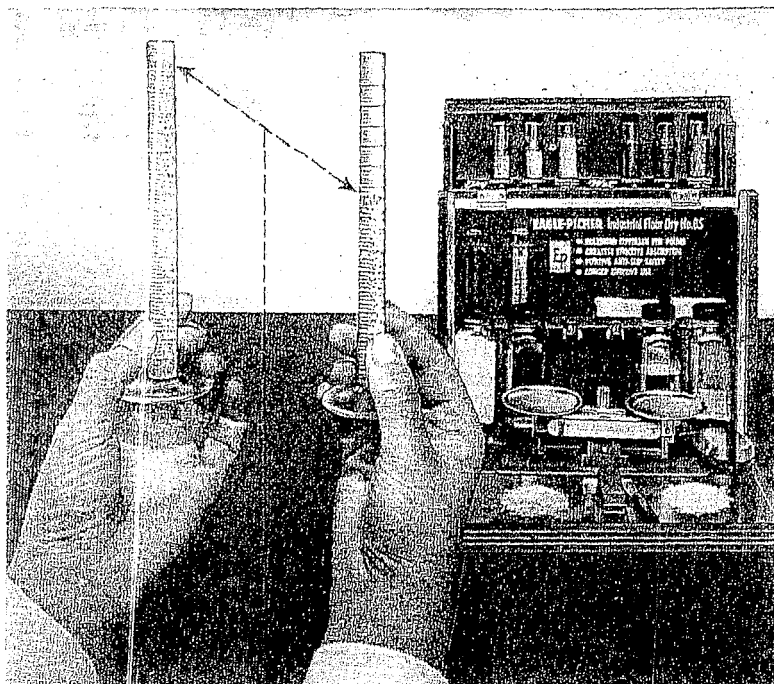
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**44th National Safety
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sorbent pads fastened to various parts of their body, and the inhalation exposure by measuring the DNOC collected in a respirator filter worn throughout a spraying cycle. The inhalation exposure was found to be less than one percent of the skin exposure.

Actual absorption of DNOC was estimated from blood and urine samples collected before, during and after spraying. The highest concentration of DNOC found in a blood sample was 4.3 ppm, substantially less than the 20 ppm which seems to be associated with the first symptoms.

The work in the Wenatchee Valley seems to involve exposure of not more than five days and not more than six hours per day for any one operator in contrast to England where the hours per day are long and the spraying season is two weeks or more.

Lung Capacity and Pneumoconiosis

"The Relationship Between Ventilatory Capacity and Simple Pneumoconiosis in Coalworkers, the Effect of Population Selection," by R. G. Carpenter, A. L. Cochrane, J. C. Gilson and I. T. T. Higgins. *The British Journal of Industrial Medicine*, 13:166-176 (July 1956).

THERE IS NOW little doubt but that shortness of breath is closely related to pneumoconiosis complicated by tuberculosis but there is no general agreement as to the relation between shortness of breath and simple uncomplicated pneumoconiosis.

To get information on this question a study has been made on 980 miners and ex-miners with simple pneumoconiosis or without pneumoconiosis. These miners were chosen from three groups. The first group was those applying for compensation, mostly for shortness of breath presumably due to pneumoconiosis, a slightly larger group of miners who were actually working in the mines and a randomly selected group of miners, ex-miners, and non-miners from two communities.

One interesting observation among the group of non-miners was that there was a linear fall of 1.36 liters per minute in the maximum voluntary ventilation

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world in
-H. L.

rate between the ages of 20 to 69 years. The miners and ex-miners with and without simple pneumoconiosis both have a lower average maximum voluntary ventilation rate than men of the same age who have never worked in mines and the miners without radiological evidence of pneumoconiosis have a somewhat lower average ventilation rate than miners with category 3 simple pneumoconiosis classified according to the listings of the International Labor Office.

It is possible that the difference in ventilation rate; between miners with no signs of pneumoconiosis and the general population are the result of one or more of a number of other factors such as occupational selection, nutrition, housing or medical care, but it is felt that since the miners and the non-miners came from the same general communities and from approximately the same social categories, that the differences between the factors with the exception of occupational selection is ruled out. It is not possible to assign a cause for this at the present time, however.

One thing which would account for the lowered ventilation in miners would be generalized emphysema which would not have any radiological signs. It is somewhat significant that the miners in the age range of 25 to 34 years, an age in which emphysema is somewhat uncommon, also showed a lowered maximum ventilatory volume.

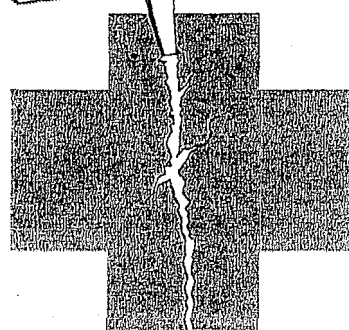
The results do not indicate a definite relationship between dust exposure and reduction in ventilatory capacity. There is not even a demonstrable relation between the years spent on the actual coal face and reduction in ventilatory capacity in these miners with simple uncomplicated pneumoconiosis.

It does seem that mining may accelerate to a marked extent in some individuals the normal decline in ventilatory capacity which occurs with age.

The chief value of money lies in the fact that one lives in a world in which it is overestimated.
—H. L. Mencken

National Safety News, October, 1956

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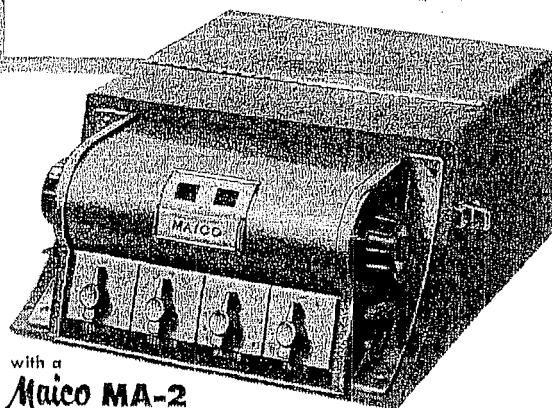
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