

Aside from plant E, it would appear that the dust hazard was not excessive except in the preparation rooms of plants B and C. The dust counts are interesting, too, when considered in the light of the permissible standard for granite dust, established by the United States Public Health Service (7), namely, about 10 million particles (10 microns and under) per cubic foot. However, we are not justified in assuming that because available information suggests that asbestosis is a milder disease clinically than silicosis, the threshold of permissible dust counts is higher. Asbestosis appears to be pathologically different from silicosis, and the experience so far does not warrant an attempt to define a standard of dustiness for asbestos dust.

## DUST CONTROL

Various measures, such as oiling, humidification, and local exhausts, tended to reduce the dust. Nevertheless, it was evident that they were only partly successful. If it is expected to control dustiness in these plants, final reliance must rest upon properly constructed exhaust equipment. In plant C in one department an experimental installation was set up. In spite of some obvious faults, this equipment, on the basis of comparative dust counts, reduced the dust by 50 percent and with further alterations will probably be 75 percent effective. In this case such a reduction seemed quite satisfactory. It is neither practicable nor economically desirable to install such equipment as will make the air entirely dust free. The normal defensive mechanism of the body takes care of a fair amount of atmospheric pollution. It is when the body is exposed to an excessive amount of dust that this defense mechanism breaks down.

The application of exhaust equipment to textile machinery involves considerable difficulty, especially where the construction of the plant is such that it is not possible to apply down-draft suction to the looms.

It is desirable to install exhaust apparatus in any plant on an experimental basis first, and then check its efficiency by dust counts. This practice will result in saving a needless expenditure of money.

### PHYSICAL EXAMINATIONS

X-ray films were made of 126 persons (108 men, 18 women) working in asbestos plants in the United States. All but five of these were given physical examination. The cases were selected more or less at random from among those having more than 3 years of employment in the industry. It was soon obvious that the early diagnosis of asbestosis must rest to a large extent on X-ray pictures of the chest. As in the early stages of silicosis, the clinical symptoms of the asbestos workers were usually indefinite and inconclusive. The interpretations of these films are based on the readings of one competent roentgenologist, but they have been reviewed by several

others experienced in this field. a minor nature, and there was ge The films were read conservative examination and the age of th positive only when there was no were guided by their experience moconioses. The films classed as subdivided into doubtful and whether the individuals classed a definite asbestosis. Particular at or absence of indications of tube reviewers of the films were in acc of silicosis in mind, it was felt devoted to ascertaining, if possi disposes to tuberculous infection.

The cases of asbestosis were in the first and second stage. The first stage was confirmed by X-ray examination definite lung changes without warrant a diagnosis of pneumoconiosis without symptoms. The second-stage asbestosis was confirmed by pathology and also definite symptoms.

All these individuals<sup>2</sup> were active and it was not practicable to make any estimate of ability or disability. Had any individual had extensive pulmonary involvement or total disability, they would have been noted, but no such cases were found.

Of the total of 126 X-ray examinations, 80 showed second-degree asbestosis, 63 as first degree, and 7 negative.

There is a definite increase in the number of years of experience in relation to the years of experience. The number of years of experience make it impossible to determine the number of years of experience enters into this increase.

TABLE 2.—Classification.

| Years of exposure   |
|---------------------|
| Over 15 years.....  |
| 10 to 15 years..... |
| 5 to 10 years.....  |
| Under 5 years.....  |
| Total examined..... |

<sup>1</sup> Part time.

<sup>1</sup> One asbestos worker (second stage) retired of his to this study, but is still active about his garden.