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! WHY THE WEATHER !

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THE DUST WE BREATHE

Many kinds of dust in the atmosphere are capable of producing pronounced pathological effects on mankind. There is a long list of "dusty trades", in which the production of excessive dust leads to pulmonary diseases or sometimes to various kinds of poisoning. Harmful dusts are not, however, confined to factories, mines, quarries and the like. The air of the average city street abounds in them. Dr. J. G. Ogden states that 61 per cent. of the dust found in the air of the New York subways consists of jagged splinters of steel, resulting from the wearing away of brake shoes, wheels and rails.

Not all industrial dusts are equally harmful. Some, in fact, appear to be quite harmless. No factory is dustier than a Portland cement plant, yet the men who breathe the fine gray powder that fills the air where cement is manufactured claim that it is actually good for their lungs. Coal miners, as a class, are remarkably free from consumption, while, on the other hand, men engaged in stone-cutting, rock-drilling and metal-grinding are ravaged by this disease unless elaborate precautions are taken to prevent them from breathing the dangerous dusts.

The explanation offered by physiologists is that nature has provided for the removal of some kinds of dust from the lungs, but not all. In the one case the invading dust particles have the same effect as bacteria in stimulating the production and activity of white blood corpuscles, or phagocytes, by which they are devoured and carried off. In the other case the phagocytes remain inert in the presence of the invaders, which soon accumulate in harmful numbers. The chemical composition of the dust rather than its physical characteristics, such as sharpness and hardness, is supposed to be the factor that determines whether or not it will be removed by phagocytic action.

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