PUBLIC HEALTH

Dangers of Dust in Industry Described at Safety Congress

Foods Were Exploded and Counts Given of Millions of Particles Per Cubic Foot of Air Breathed by Workers

DUST HAD an important place on the program of the National Safety Council which met in Washington.

The explosive possibilities of the dusts of foods were demonstrated with a convincing bang, and results of studies of dusty atmospheres in which men must work were given, so that their health may be better protected.

Corn starch, baking powder, powdered milk and other grocery store goods are harmless enough once they land on the shelf. But back in the factory where these foods are prepared, the air may grow heavy with particles of dust from the food products. And, in those circumstances, certain food dusts are highly explosive, government engineers have discovered.

Dr. David J. Price, principal engineer of the Chemical Engineering Division, Department of Agriculture, planned twelve experimental explosions to show how dust explosions occur, how to fight them, and, what is most important, how to take protective steps in advance against them.

The experiments were staged at the government testing station, where the engineers have built a miniature factory which reproduces actual conditions. Dr. Price demonstrated how factories can be protected against structural damage by the placing of properly proportioned vents. These vents release dust explosion pressures.

Besides a number of food dusts, explosions of soap powder, cork dust, and wood dust were set off for the congress.

Dusty Trades Studied

A report on the dust content of the air in talc mines, coal mines, granite quarries, and various other dusty trades was presented by Dr. J. J. Bloomfield of the U. S. Public Health Service, who not only summed up the findings of his own research, but recalled to the Council the work of other investigators on this dust hazard problem.

It has long been recognized that workers who breathe some kinds of dust, day after day, are exceptionally prone to develop a lung condition known as fibrosis. Tuberculosis is sometimes associated with this condition.

Scientists have been working to find out how much dust and what kinds constitute this health hazard.

Dr. Bloomfield told of measuring dust grains as small as one fifty-thousandth of an inch in diameter. Grains smaller than that, he reported, are negligible in damaging the lungs.

2,160,000,000 Particles

The number of grains of dust that hang in the air of mines and shops have been counted. The greatest number of grains were breathed by jack-hammer drillers in talc mines. In every cubic foot of air around these men, there were 2,160,000,000 particles of dust. Anthracite coal miners breathed 232,000,000 particles of dust to a cubic foot of air. Cotton cloth weavers breathed 5,000,000 particles to the cubic foot.

The straight dustiness of the air, however, is not a guide to its degree of unhealthfulness. The dusty atmospheres that lead to lung troubles are especially those that are laden with particles of quartz. In the heavy air of the talc mine there is no quartz. The anthracite miner breathes one and one half per cent. of quartz in the dust around him. The cotton cloth weaver breathes none.

On the other hand, the laborers and mill operators in a quartz grinding plant breathe in air that is not nearly so heavy with dust as the coal mine or the talc mine, but it is 99 per cent. quartz. The tool finishers and drillers in a granite quarry breathe 35 per cent. of quartz.

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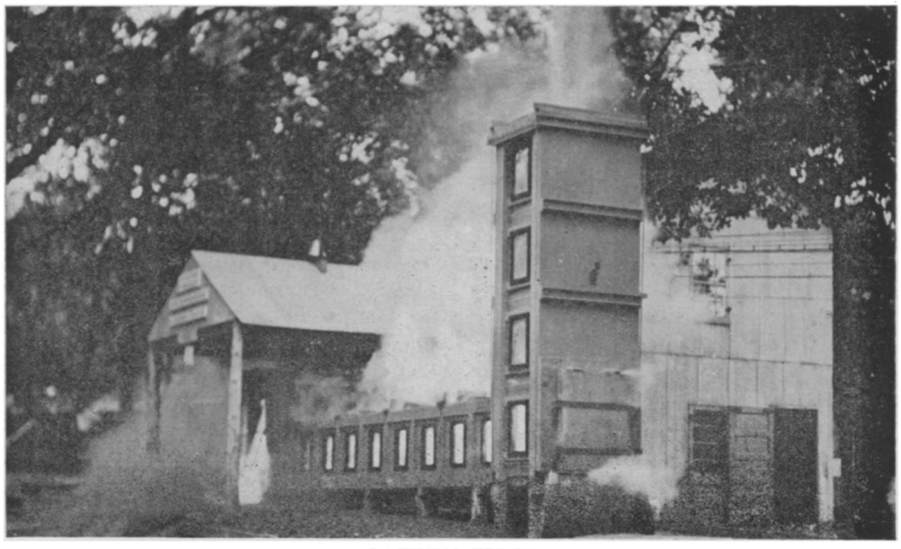

SAFETY FIRST

This explosion of grain dust in the Government's miniature factory went off with noise, flames, and smoke. But there was no flying glass from shattered windows, no damage to the little shop, the gallery or the tower. The plant had been adequately provided with safety vents which opened to carry out the flames and release pressure.

GEOGRAPHY

Copy of Columbus' Map Found in Constantinople

A COPY of a map made by Columbus in 1498, the original of which vanished long ago, has been found in a Constantinople museum. It is described by Prof. Paul Kahle of the University of Bonn, in the German scientific journal *Forschungen und Fortschritte.*

The copy appears as part of a large world map made by the Turkish geographer and navigator Piri Re'is, dated March, 1513. The lands of the Old World are derived from other early maps, but when it came to the newly discovered land across the Atlantic the Turkish cartographer depended entirely on Columbus. The islands are located as he described them, and the names on the towns and physiographic features are