PUBLIC HEALTH

Hope For Saving Workers Exposed to Silica Dust

Experience of South African Mines Indicates That Engineering and Medical Preventives Are Successful

HOPE that the half million workers in the United States who are exposed to silica dust in dangerous amounts may be saved from silicosis appears in the discussions of dust diseases at the Harvard School of Public Health.

The effectiveness of dust control measures in preventing silicosis is seen in the experience of the South African gold mines as cited by Prof. Philip Drinker of Harvard.

"No new Rand miner who has entered the industry since August, 1923, has contracted silicosis," Prof. Drinker quoted from a South African report covering a ten and one-half year period. "These facts demonstrate that the engineering and medical measures which have been directed against silicosis have achieved a very significant degree of success."

In South Africa, and only there, it was realized at the outset, Prof. Drinker said, that dustiness would not be controlled properly unless measured and recorded routinely. Discussing various methods that have been devised for measuring the amount of harmful silica dust, Prof. Drinker said that a rapid method making use of a portable instrument was best for routine measurements.

Dust Standards

The practical plant or mine manager wants an objective for his dust control, but unfortunately there are not and probably never will be exact figures to show a safe limit of silica particles in the air. Studies of the U. S. Public Health Service suggest some figures for dust standards. In the case of barre granite, a dustiness of ten to twenty million particles per cubic foot was found reasonably certain not to cause disability of the workers. In the anthracite coal mines, counts of 50 million per cubic foot, with five per cent quartz in the coarse dust, seemed safe.

Still another standard is desirable for the plant that handles dust of a kind that has not been proved a serious hazard to health. Scientists cannot give the manager of such a plant any figures, but Prof. Drinker suggests that he investigate one of the many plants that have reduced dustiness without waiting for their workers' health to be affected by the dusty atmosphere. Generally, the manager and workmen of the clean plant will uphold eloquently the advantages of dust control.

Progressive Disease

Once silicosis has developed, it is likely to progress, Dr. W. Irving Clark, physician to the Norton Company and assistant professor of industrial medicine at the Harvard School of Public Health, pointed out. The reason for this seems to be that in high concentrations silica is toxic and kills tissue. This progressive tendency of silicosis is a serious problem for industry. A worker, for example, may contract silicosis while working for one employer and may develop disabling symptoms many years later while working for another employer. If the work for the second employer involved exposure to dust of an inert nature, which affects the lungs slightly as seen in X-ray pictures but does not disable the patient, the second employer may have difficulty in proving that the dust in his shop was not the cause of the disability.

Prevention Essential

Prevention is the only method of treating the lung diseases caused by dust, among which the most serious is silicosis. Dust must be eliminated from industry wherever possible, and when this is not possible the worker must use a protective device such as a respirator or a positive air pressure helmet. When examination shows the worker's lungs have become affected by the dust, it is best to keep him at work but in a non-dusty department. As shortness of breath increases, lighter work must be given him.

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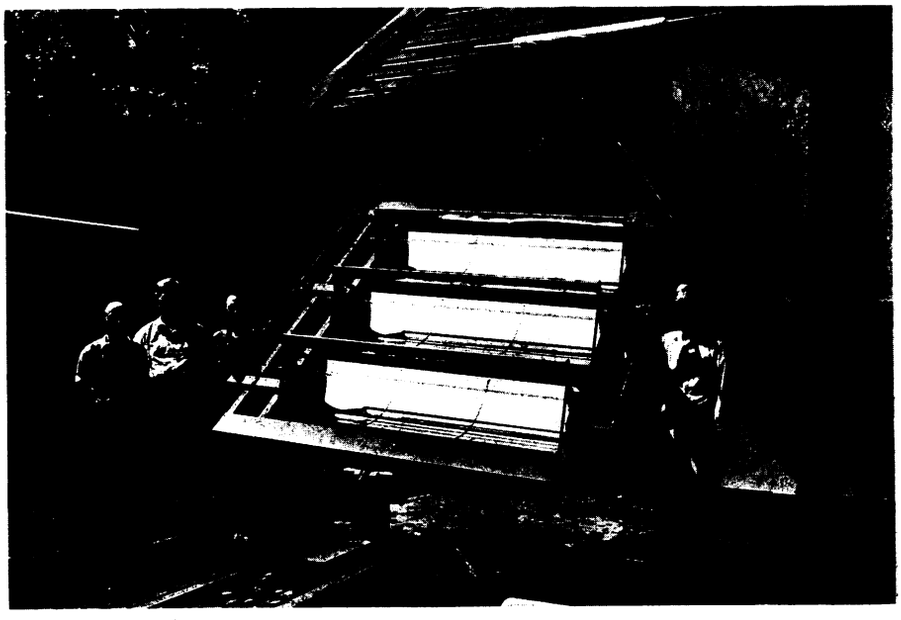
Since a grasshopper can lay from 25 to 100 eggs, farmers figure that they are reducing next year's pests by at least 25 hoppers, when they destroy a female grasshopper before egg-laying time.



SUN COOKER

Changed in form and improved over previous models is the solar heater of Dr. C. G. Abbot, Secretary of the Smithsonian Institution, which will operate a one-half horsepower electric motor as an exhibit during the meeting of the Third World Power Conference in Washington, Sept. 7-12. Shown above is Dr. Abbot (right) and his assistants (left to right) L. A. Fillman, L. B. Clark and R. M. Clagett. (See SNL, Aug. 8.)

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