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Louis Brookman, Jr., Business Manager
L. Moeller, Circulation Manager
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Representatives

New York City
E. Macdonald Bacon
17 West 45th—Room 909
Longacre 3-5260

Detroit
Parker & Tarbell
419 Curtis Bldg., 2842 W. Grand Blvd.
Madison 1540

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The Cement Mill Edition of Concrete

The Cement Mill Edition of CONCRETE is edited exclusively for those interested in the manufacture of portland cement and related products.

Its pages are devoted to discussions of plant design, management, operation, production efficiency, chemical research and control, quarry operation, progress and news of the industry.

The Cement Mill Edition also contains all the material published in the corresponding Regular Edition and so provides news of the uses and merchandising of the materials whose manufacture is discussed in the Mill Edition.

The Regular Section furnishes mill operating officials and mill executives valuable points of contact with the users of the materials they produce.

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A. C. BAMBERGER, Assistant Editor

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of Mining and Metallurgical Engineers, in February, 1937. He said:

"In the present state of our knowledge, it is not possible to establish permissible limits of dustiness for all dusty industries or processes, as the variation both in the dust content and in external modifying conditions is so extreme. In mining, however, working conditions are fairly constant and it would be extremely valuable to the industry if the various mining companies that face a silica hazard would establish, with the help of the proper governmental authorities, tentative standards practicable and applicable for their own mines. Some have done so and it is a long step in the right direction."

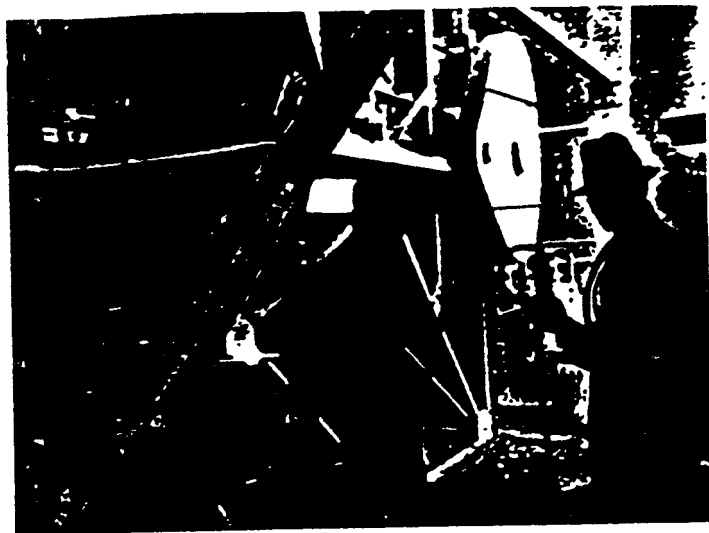
This recommendation might well be extended to other industries.

More Knowledge Is Needed

The National Silicosis Conference tentatively established a maximum of five million particles per cubic foot as a safe quartz concentration in the case of highly siliceous dusts. This standard is subject to modification as more data are developed by different industries. The National Silicosis Conference report also says, "It is recommended that clinical and engineering studies be carried out as rapidly as possible to establish the necessary scientific data upon which we may base practical and effective regulatory standards." The report then states that knowledge of three factors is necessary for establishing safe concentrations of atmospheric dust:

1. The relative number and size of the free silica and the other particles suspended at breathing levels in the different parts of the industrial atmosphere.
2. The proportion of the workmen's time actually spent in the various dust concentrations.
3. The effects of exposure to environment, as revealed by the occupational and medical histories of old employees, by physical examination and by the roentgenological appearance of their lungs.

Through a knowledge of these three factors, any industry can discover what, if any, hazard it has and what preventive measures are needed. For the past two years, under the direction of Dr. Leroy U. Gardner of the Saranac Laboratory for the Study of Tuberculosis, the cement industry has been making a careful estimate of the health of its workers, according to the plan just outlined. Many of the statements in this paper regarding



Dust sampling at hammer mills—raw end

the effect of mixed or non-siliceous dusts have been based on the findings of these studies.

One of the outstanding conclusions a student of these researches in the cement industry will reach is that concentrations of free silica appreciably higher than the maximum specified by the Silicosis Conference are safe if the silica constitutes a moderate proportion of the total dust. Apparently a mixture of silica with other minerals, if the other minerals are predominant, tends to inhibit the effect of the silica in the lung. It is not yet possible to recommend, without reservation, the dilution of silica with other dusts as a protective measure. It is far better to remove the dust from the atmosphere. Nevertheless, it is significant that in the portland cement industry, where a high concentration of raw material dust containing up to 10 per cent of free silica is sometimes found, the X-rays and physical examinations reveal no pathological lung condition attributable to dust.

The Practical Limit

Although no agreement has been reached as to the maximum safe concentration of free silica in the presence of harmless dusts, agreement as to good housekeeping limits is practically unanimous. Industries with a dusty process, even though dusts are harmless, should endeavor to reach a concentration in the neighborhood of 100 million particles per cubic foot of air in the breathing zone of the workers, in the interests of comfort and increased efficiency.

The third factor in the development of silicosis is duration of exposure. The

problem of exposure resolves itself into two parts. First, what proportion of the workers' time is actually spent in the dusty atmosphere? It is evident that a hazardous dust will not affect a man unless he is actually exposed to it and will not have as great an effect on a man who is exposed to it one hour a day as on a man continuously exposed.

[The remaining part of this paper will discuss the effect of duration of exposure, followed by a discussion of preventive measures—Editor.]

Plan New Cement Plant for Turkey

ACCORDING to a report to the U. S. Bureau of Foreign and Domestic Commerce from the office of the American Commercial Attache at Istanbul, the Turkish Government has awarded a contract to a European equipment manufacturer for cement mill machinery to be installed in a new plant at Sivas.

Installation of the machinery is expected to start in October of this year, and the plant should enter into operation in July, 1939, with a daily production capacity of 300 tons, or 90,000 tons per year. In view of the abundance of raw material in the surrounding district, it is hoped that the factory will soon be able to double its production. The quarries will be connected with the plant by an aerial line of 3,100 meters. It is anticipated that when this factory enters into production the Eastern Vilayets and Central Anatolia will be supplied with cement at considerably lower prices.

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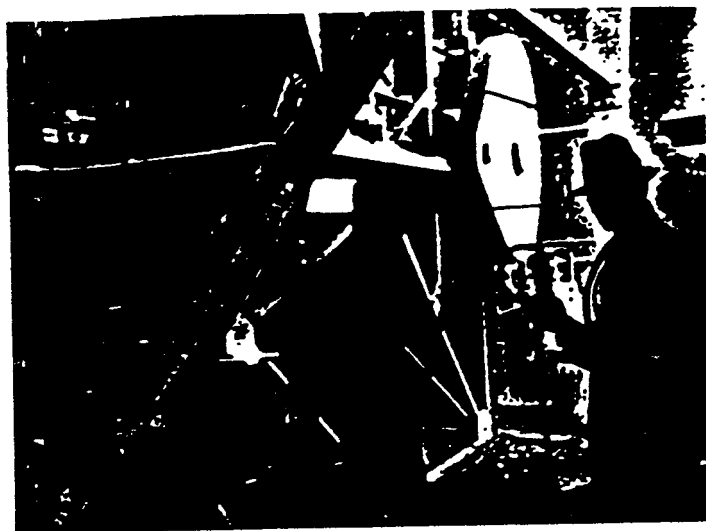
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