

MINING

# Few Mines Protected From Explosions by Rock Dusting

**For a Cost of Less Than One Cent Per Ton of Coal Mined Inert Dust Would Prevent Many Fatal Explosions**

**G**REAT coal mine explosions like the one which claimed about 80 lives at Millfield, Ohio, are preventable disasters, because they probably never occur if every mine were to make use of the precautionary measures, especially rock dusting, already worked out by mining engineers, it is believed by George S. Rice, chairman of the Mine Safety Board, of the U. S. Bureau of Mines.

Coal when in the form of dust suspended in air is explosive; and in coal mines, as in blasting powder plants, every precaution is necessary in order to prevent explosions and fire. At this time of the year when the mines are working to capacity, and coal dust becomes dry from the entering cool dry air, operators should be particularly vigilant and cautious.

Government recommendations and state regulations have placed in the hands of mine operators information regarding the most effective methods of guarding against disasters. All open lights or other sources of ignition, whether from lamps, open sparking machinery, or flaming explosives, should be avoided.

Another approach to the problem, besides the elimination of sources of ignition, is the thorough ventilation of the mine and the treating of the explosive coal dust by what is known to mining engineers as "rock dusting."

Rock dusting is a recently adopted method of making the coal dust non-explosive. Finely pulverised inert material is spread in the mine and mixed with the coal dust so as to dilute it. If more than 65 per cent. of the mine dust is incombustible, the mixture can not explode in a dust cloud. Every portion of the mine must be thoroughly and constantly rock dusted for complete safety.

The safety division of the U. S. Bureau of Mines has found that notwithstanding the fact that mining engineers generally recognize the fact that widespread explosions can be almost ab-

solutely prevented in coal mines by this method, rock dusting is not yet used in the majority of our coal mines. Despite the fact that thorough rock dusting would cost less than one cent per ton of coal, only a small percentage of the mines in this country are thoroughly rock dusted. In Ohio, of the approximately 600 mines operating, according to latest reports, only about five are rock dusted. A larger number are partially rock dusted and this lessens the hazard to a degree. The Millfield mine was not even partially rock dusted.

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MEDICINE

## Glandular Extract Fails To Cure Cancer in Mice

**E**XTRACT of the adrenal cortex glands, which has been the underlying factor in a number of recently suggested treatments for cancer in man, has no curative effect on cancers in mice, Drs. Shigemitsu Itami and Ellice McDonald of the University of Pennsylvania have just reported to *Science*. Since cancer in mice is comparable to

cancer in man, Drs. McDonald and Itami conclude that the use of this glandular extract is not suitable for treating cancer in man.

Their work was prompted by the announcement last winter of Drs. W. B. Coffey and J. D. Humber of San Francisco that they had developed a successful method of treating cancer with an extract of the cortex of the adrenal glands. The use of glandular extracts for treating this disease had previously been studied and described by other investigators, but the greatest claims have been made for the Coffey-Humber method. The men are reported to have treated 2,000 patients during the last year.

The University of Pennsylvania investigators used a glandular cortex extract prepared by Drs. W. W. Swingle and J. J. Pfiffner of Princeton University. This extract has proved capable of substituting for the hormone secreted by the adrenal cortex itself in animals that have had their adrenal glands completely removed.

"Not a single tumor in two dozen mice was arrested clinically, the results having thus been entirely negative," Drs. McDonald and Itami reported. "Death occurred at the customary times in all the animals, and the injections were without effect. As spontaneous growths of the mouse are analogous with those of man, it is very probable that the treatment here described would be useless in the human patient."

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Cathode rays can be used to detect an artificial sapphire that is posing as a real gem.



**A MADE-TO-ORDER COAL DUST EXPLOSION**

Set off in an experimental shaft of U. S. Bureau of Mines at a meeting of the National Safety Council last month. The dust blew out of the ground and exploded in mid-air. Red flames are to the front and behind them, billows of smoke.