

## PHYSIOLOGY

# Coal Dust Possible Benefit To Miners, Says Haldane

Mixed With Harmful Silica Dust, It is Coughed Up, Whereas Silica Dust Alone Remains Lodged in the Lungs

INSTEAD of being a health menace, coal dust breathed in by miners along with rock dust may be a positive benefit, Prof. J. B. S. Haldane of Cambridge University, noted biochemist and physiologist, told a University of Michigan audience in a lecture on "Bad Air."

The secret is that coal dust seems to stimulate the expectorant activities of the lungs and throat, so that this dust is eventually removed from the lungs. Rock dust has no such action and normally would remain, a health hazard in the lungs, but when coal dust is mixed with it, the rock particles adhere to the coal and are largely removed from the body when the latter is coughed up.

In the mining sections of the Rand, in South Africa, workers in the quartz seam gold mines are being given transfers of several months to the coal mines as a practical test of this finding, Prof. Haldane stated.

Of all working conditions, bad air of one sort or another is the greatest, but most insidious killer, far exceeding industrial accidents in its final totals, declared Prof. Haldane. Flyers, who at high altitudes get not impure air, but too little, should be warned that the symptoms of this condition are high spirits and optimism which may lead to continued exposure or foolhardy feats.

British statistics, kept on a national scale, indicate that workers in trades exposed to mineral and metallic dust, cutlery grinding being an especially bad example, are much more liable than the average man to tuberculosis, pneumonia and edema of the lungs. Limestone and igneous rock workers, and flour mill employees do not seem to suffer ill effects, but employees in dust-filled cotton mills and sand blasters do, Prof. Haldane stated. Silica dust is always dangerous.

Every employer of labor where dust or dangerous gases are an occupational risk, should take steps to remedy the condition. The worker who is being protected is usually the hardest factor to

deal with, Prof. Haldane declared. Employes can easily be urged to protect themselves against machinery that may cause their death in an hour's time, but become careless with dust that may mean death in five years. Employers also benefit from protective measures. In England, he said, one of the reasons why the tin mines have been abandoned was the high compensation rates the operators had to pay workers injured under bad conditions.

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## VETERINARY MEDICINE

## Vampire Bats Transmit Panama Horse Disease

MURRINA or trypanosomiasis, fatal disease of horses in Panama and northern South America, is transmitted from infected cattle to healthy horses by the vampire bat.

This is the second known instance of a disease being carried by a mammal. Discovery of the bat's role in the spread of the disease was made at the Panama laboratories of the Gorgas Memorial Institute and is reported by the director, Dr. H. C. Clark.

The only other mammalian vector of disease so far known is the dog, which transmits rabies. Certain other animals, such as rats, play an important part in the spread of diseases, but the actual transmission of the germs is by insects.

Dr. Clark and associates had been investigating flies, fleas and many other insects in their more than 20-year search for the vector or carrier of this disease. Having ruled out insects, they sought for the only blood feeder left that commonly attacked horses, mules and cattle, the vampire bat, although it seemed like medical heresy to suspect this mammal.

Yet they have now established the fact that these animals acquire the disease by feeding on a horse, mule or laboratory animal infected with the disease and that they live about one month after

acquiring it. During this time their appetite is unaffected, so that there is ample time for them to pass the disease on to uninfected animals on whom they may feed. The germ of the disease incubates for about ten days in the body of the vampire bat. It then gets into the saliva and so is readily transferred to the next animal the bat feeds on.

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## CHEMISTRY-ENGINEERING

## Ice-Destroying Chemicals Injurious to Concrete

TESTS conducted by the Michigan State Highway Department indicate that both sodium chloride and calcium chloride are injurious to concrete pavements because they weaken the mortar bond between the sand and rock in the concrete.

It makes little difference whether a large or a relatively small amount of chemical is used, B. C. Tiney of the Michigan Highway Department explained in a report to the Highway Research Board meeting in Washington, D. C. The injury will be just as great in either case. A few limited tests, however, indicate that oil put on the concrete before the initial set prevents the injurious effect.

The chemicals are usually applied with sand or cinders to partly melt the ice and imbed the abrasives. The tests were made on 28-day-old concrete.

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## ENTOMOLOGY

## American Insect Pest In Austrian Orchards

SAN JOSE scale, one of the worst insect pests of orchard trees in America, has been discovered in several recently-planted orchards in Austria. It was traced to a source in Hungary; the insects were on young trees from nurseries in that country. All such nursery stock is supposed to be fumigated with cyanogen gas, but apparently in some instances due care was not exercised.

All the affected trees in Austria have been destroyed, and the orchards where they grew are under strict quarantine. Hungarian authorities are taking steps to wipe out the focus of infestation in their country, and German agricultural and customs officials have redoubled their guard against the pest.

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