

with the surrounding atmosphere in a matter of minutes. From this criticism of the above theory, Wright then goes into a discussion of the unique biologic properties of silica which require explanation. These include the findings that the reaction produced by silica in the lungs is not produced by any other mineral; the particles must be within a fairly definite size range between 100 Å and 3 μ ; the reaction is a function of surface; the silica facilitates the proliferation of tubercle bacilli in tissue, and finally that while the biologic activity of silica can be demonstrated in animals as low as fish, it has not been shown in tissue culture. Research on these phases is suggested.

In conclusion the author stresses the necessity of complete definition of a dust cloud in both laboratory investigation and industrial studies. In answer to the argument that instruments and technics for doing this do not exist, it is stated that there is no theoretical reason why they should not exist and that time should be spent to develop them.

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NEWER OCCUPATIONAL DISEASES. J. B. SKINNER, New England J. Med. **243**:482 (Sept. 28) 1950.

After briefly mentioning the clinical syndromes observed in workers exposed to beryllium and its compounds, Skinner directs attention to the problem of atmospheric pollution, which has been given wider attention since the "Donora disaster."

The success that the use of DDT achieved as an insecticide stimulated research in the field of organic insecticides. Chlorinated organic compounds such as DDT, chlordan, benzene hexachloride (gammexane®) and chlorinated camphene have been used with some adverse effects, but organic phosphates such as hexaethyltetraphosphate (HETP); O, O-diethyl, O-p-nitrophenylthiophosphate (parathion) and tetraethylpyrophosphate (TEPP) have been proved to be more toxic to human beings, and several deaths have been reported as a result of their use. The author gives particular attention to parathion, pointing out that because of the muscarine-like action of parathion—that is, stimulation of the parasympathetic nervous system—atropine is a definite antidote. Placing of the patient in an oxygen tent immediately on the first signs of possible pulmonary edema is of great benefit.

Reviewing a fatal case of coccidioidomycosis in a wool sorter, the author recommends roentgenological examinations of the chest and coccidioidin tests of the skin for wool sorters.

Tetryl dust may cause cirrhosis of the liver and death in workers exposed to it.

Another occupational disease hazard that, although not new, has recently received nationwide attention is that occasioned by the use of shoe-fitting fluoroscopes.

NEW TESTS FOR THE STUDY OF THE SILICOTIC LUNG. M. HUGH-JONES, Arch. d. mal. profess. **10**:430 (May) 1949.

The paper describes new tests used by the (British) Medical Research Council's Pneumokoniosis Research Unit.

An index of dyspnea is obtained from measurements of the minute-volume of respiration. The patient performs a step-climbing test. The height of the platform to be mounted and the rate of climbing are adjusted according to the body build of the individual, so that the same effort is imposed on each patient. The ratio of the minute volume of air breathed after five minutes' exercise to the maximum respiratory capacity of the patient, expressed as a percentage, is the index of dyspnea. The results of the test agree well with clinical judgments.

The maximum respiratory capacity is determined in spirometer tests with electrical recording. The test is explained to the patient, he is encouraged to breathe as rapidly as possible, and when the experimenter is sure that maximum effort is being made, the volume of air respired during 15 seconds is recorded.

A closed circuit spirometer is used to measure the subdivisions of the total lung capacity. The spirometer contains a known quantity of helium, the degree of dilution of which is measured with a katharometer. The results obtained by this method are in perfect agreement with those got by the use of the nitrogen displacement method in open circuit.

Another test which is being used is the measurement of the ease of passage of alveolar carbon dioxide into the arterial blood. The concentration of carbon dioxide in the expired air is measured directly by an infra-red gas analyzer. The apparatus gives good results with rapid recording.