



Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL

APRIL, 1964

(Vol. 28, No. 4)

INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

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PLAINTIFF'S EXHIBIT

CHR-298

discrete indicator of the early changes produced by silica should not be entirely ignored.

-- APCA Absts.

- 103 Changes in Activities of Respiratory Enzymes in Lungs of Guinea Pigs Exposed to Silica Dust. II. Comparison of the Effects of Quartz Dust and Lampblack on the Succinate Oxidase System. Maria G. Breyer, T.A. Kilroe-Smith, and H. Prinsloo.
Brit. J. Ind. Med. 21, 32-34 (Jan. 1964).

Kilroe-Smith and Breyer (Proc. Pneumoconiosis Conference, Johannesburg, 1959, Edited by A.J. Orenstein, P. 461, Churchill, London; Brit. J. Ind. Med. 20, 243 (1963)) reported that in the early stages of silicosis in guinea pigs exposed to the inhalation of quartz dust, before the formation of collagen, there were increases in the specific activities of the complete succinate oxidase system and succinate dehydrogenase. The effects on these enzymes of quartz dust have now been compared with the effects of the fibrogenically "inert" lampblack. Lampblack causes a slight increase in the specific activities of these enzymes but the effects are small compared to those caused by quartz. Lampblack also causes a much smaller increase in lung weight than quartz, thus the enzyme increases are roughly parallel to the rise in lung weight. It appears that the effects observed on the enzymes are part of the general pattern associated with the early stages of the development of silicosis.

-- Authors' abst.

- 104 Changes in Activities of Respiratory Enzymes in Lungs of Guinea Pigs Exposed to Silica Dust. III. Progressive Effect on the Succinate Oxidase System of Dust Contained in the Lung after Cessation of Dust Inhalation.
T.A. Kilroe-Smith, Maria G. Breyer, and H. Prinsloo.
Brit. J. Ind. Med. 21, 35-37 (Jan. 1964).

Previous studies have shown the relation between enzymatic activities in the succinate oxidase system including succinate dehydrogenase, and the early changes in the lungs of guinea pigs exposed to the inhalation of quartz dust. The authors have now investigated whether the increase of enzyme activity depends on maintaining the dust inhalation or not. Animals exposed to the inhalation of quartz dust for a short period of 28 days, sufficient to produce only small changes in the specific activities of the enzymes, and then removed from the dusty atmosphere for a further period of 113 days showed increases of the same order as animals which remained in the dusty atmosphere for a period of 133 days and were then taken out of this atmosphere for 8 days. These increases of enzymatic specific activities are paralleled by increases in lung weight. Hence, in this respect also, the increases in activity of the enzymes follow the same pattern as the fibrogenesis.

-- Authors' abst.

- 105 Pulmonary Asbestosis. V.D. Redaksie, S. African Med. J. 37, 629-630 (June 15, 1963).

In factories the asbestosis hazard is still high despite improved hygienic conditions. The incidence is 44.5% in workers with 20 or more years of exposure and 28% in those with 10-15 years. In Canada, where almost three-fourths of the world's production of asbestos is mined, the miners would appear to suffer little asbestosis and show no significantly increased incidence of cancer of the lung. But in South Africa the miners, and even those living in the vicinity of the mines, have developed both asbestosis and pleural mesotheliomas. The author mentions the study in Capetown of Thomson and co-workers in what would appear to be the first investigation into the extent to which urban dwellers are exposed to the inhalation of asbestos fibers. That study would indicate that asbestos fibers are now an urban hazard. They did not find that it was a significant hazard as of now, but were more concerned with what might happen in the future. The current author comments further, noting that the world production of asbestos is increasing at a staggering rate, and is now 8 times it was 35 years ago. Asbestos-containing products are ubiquitous especially in urban areas. The facts that asbestos fibers are virtually indestructible, and that it is now accumulating on the surface of the earth, mainly in cities, at the rate of 2,400,000 long tons/year are reasons why these fibers may become progressively more dangerous to man. Motor vehicles discharge asbestos dust from brake drums, clutches, silencers, and under-body coatings; modern buildings may

contain asbestos products from the roof to the basement. It would be a hard turn of fate if the avoidance of ordinary pulmonary asbestosis might lead to an increased frequency of mesothelioma of the pleura or peritoneum, presumably because the population is living longer and the carcinogenic action of asbestos has a longer time to act. It might be well to start now to restrict some of the unnecessary and possibly dangerous uses of asbestos.

-- APCA Absts

- 376 Peritoneal Tumours in Asbestosis. J.B. Enticknap and W.J. Smither. Brit. J. Ind. Med. 21, 20-31 (Jan. 1964).

Eleven cases of diffuse abdominal tumors in association with exposure to asbestos were discovered in the years 1958 to 1963. There were 8 men and 3 women, all of whom had worked in the same factory. In 7 of the men the age at death ranged from 38 to 78 years; one man is still alive at the age of 46. The women died at 44, 61, and 67. The survival time after the first exposure varied from 20 to 46 years. The shortest period of exposure was 10 months and the longest 32 years. All three of the main commercial types of asbestos had been involved in their working operations. Histological confirmation of the nature of the tumor has been obtained at necropsy in 9 of the 10 deceased and at biopsy in 6, including the survivor. A remarkable feature of these cases is the minimal fibrosis found in the lungs. In 3 men and one woman, asbestosis was not diagnosed during life, and no patient was completely disabled by pulmonary fibrosis.

-- Authors' abst.

PHYSICAL ASPECTS OF THE ENVIRONMENT

- 377 Laser—Medical and Industrial Hygiene Controls. H.E. Tebrock, W.N. Young and W. Machle. J. Occ. Med. 5, 564-567 (Dec. 1963).

The principles of controlling environmental laser hazards are as follows: (1) Avoidance of principal beam and its reflection. (2) Proper education of personnel involved. (3) General information given those who might be casually exposed. (4) Use of warning devices to indicate laser in operation. (5) Policing and clearing of area for long-range operation. (6) Use of proper antilaser eye shields on any observer likely to be exposed. (7) Use of count-downs, with persons closing eyes or looking away from pulsed, high-power beam. (8) Reporting of all persistent after-images to medical department. (9) Fundoscopic and slit-lamp examination of all people involved in laser operations. Laser research may well lead to beams of longer and longer wave length as new materials are discovered that satisfy laser requirements. There is also a simultaneous effort to secure increased power output. Since new effects may be noted as the equipment changes, new or additional health and safety requirements must necessarily be formulated to meet the ever changing experiments.

-- Authors' summary

- 378 How to Cope With Electric-Motor Noise. J. Campbell. Machine Design 35, 139-158 (March, 1963).

Noise of magnetic and mechanical origin in electric motors is discussed; diagrams of airborne noise and vibration levels are presented for various types of electric motors; establishing specifications for maximum permissible noise values, and steps to reduce motor noise are described. This article is based on a two-year investigation performed at the Norwood Development Laboratory of the Allis-Chalmers Manufacturing Company.

-- J. Am. Soc. Safety Eng. Absts.