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THE COVER

Mrs. Margretta "Buffy" Rottmayer is first aid nurse on the 20-story Hartford Fire Insurance Company Group skyscraper project in Chicago. Here, she pauses on the construction site after one of the frequent tours she makes daily. Although the rigors of getting around and treating injured men are more difficult here than in most industrial nursing situations, Buffy is enthusiastic about construction nursing.

38,000 copies of this issue were printed

National Safety News, September, 1960



OCCUPATIONAL HEALTH

Abstracts of current literature on Occupational Hygiene, Medicine, and Nursing

By J. T. SIEDLECKI
Industrial Hygienist, N.Y.C.

Roentgen Study Of Silicosis

"Roentgen Study of Silicosis in Ceramic Workers Who Have Received McIntyre Aluminum Powder." By J. W. G. Hannon, M.D., P. G. Bovard, M.D., and L. R. Osmond, M.D. *Industrial Medicine and Surgery*. Vol. 29, No. 6. June 1960. Pp. 286-289.

THERE HAS been considerable discussion among various investigators whether aluminum therapy is of any value in the prevention of silicosis in workmen exposed to high concentrations of silica dust and whether aluminum therapy does prevent the usual progression of established silicosis.

The authors in this paper report a study of a program started in 1944 in a plant that manufactured ceramic sanitary bathroom fixtures and where the average dust exposures were seven million particles per cubic foot with a quartz content of 25 to 30 per cent. At the beginning of this study many of the 132 workers involved had long exposure to silica and showed radiological evidence of silicosis. Aluminum therapy treatments consisted of six-minute inhalations once a week.

The authors point out that plant management had put in engineering control measures to minimize the hazard of airborne silica dust, but in spite of these controls, new silicotics were being developed each year. For this reason plant management decided to inaugurate a program of aluminum therapy and prophylaxis. The authors conclude:

- "1. The inhalation of McIntyre Aluminum Powder can help protect workers from silicosis for 15-plus years.
- "2. The use of McIntyre Aluminum Powder will prevent or decrease the rate of severity of the usual progression of ceramic silicosis.
- "3. There was no evidence that the

inhalation of McIntyre Aluminum Powder was harmful in any manner to workmen who took this type of additive prophylaxis in the prevention of silicosis."

Asbestosis, Carcinoma Of the Lung

"Asbestosis and Carcinoma of the Lung." By J. Anderson, M.D., and F. A. Campagna, M.D. *Archives of Environmental Health*. Vol. I, No. 1. July 1960. Pp. 27-32.

THE AUTHORS report on a case of asbestosis associated with carcinoma of the lung. The literature is also reviewed, and it is indicated that this is the 24th reported case with complete autopsy findings.

Many investigators previously have felt that asbestosis predisposes to lung carcinoma. Hueper of the National Cancer Institute reported that 127 cases of asbestosis carcinoma of the lung are on record. The authors in this paper have indicated that, in their case, the patient had been a heavy smoker until five years before his final illness.

They also indicate that two other investigators commented on smoking and their patients had been heavy smokers. They suggest that any further cases of asbestosis with or without tumors be reported with careful attention to other factors, such as smoking. It is only when all the facts are available that an evaluation can be made of the relationship between asbestosis and lung carcinoma.

Providing Suitable In-Plant Environment

"A Practical Method of Providing a Suitable In-Plant Environment." By K. E. Robinson. *Industrial Medicine and Surgery*. Vol. 29, No. 6. June 1960. Pp. 233-237.

THE AUTHOR indicates one must have a basic understanding of how

a worker reacts to his environment before different methods of heating and ventilating can be evaluated to obtain a satisfactory environment in a plant.

He discusses the A.S.H.V. Comfort Chart for still air effective temperature chart. Unfortunately, these charts are not well illustrated in this journal. However, they can be found in *Manual on Ventilation* published by the American Conference of Governmental Industrial Hygienists. With these charts, one can determine whether or not plant conditions are within a temperature zone considered comfortable.

The author also describes why many heating systems fail to provide satisfactory environmental conditions in industrial plants. The author discusses with illustrations how to control the environmental conditions in a plant having operations such as heat-treating operations involving considerable quantities of radiant energy.

He stresses that satisfactory installations must be based on reaction of the individual to environment rather than supply the heat loss based on a calculated B.T.U. loss from the building.

Arsenic: Chronic Human Intoxication

"Arsenic: Chronic Human Intoxication." B. D. Dinman, M.D., D.Sc., *Journal of Occupational Medicine*. Volume 2, Pp. 139-141. March 1960.

THE AUTHOR reviews manifestations of chronic arsenic intoxication in humans, giving the diagnosis, therapy, and prognosis. He indicates that occupational exposure to arsenic and its compounds has rarely produced acute and systemic intoxication among exposed workers. Acute cases of arsenic intoxication

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have been caused by accidental ingestion of various arsenicals. This has been due largely to the availability of these compounds in insect sprays.

Although occupational exposure to arsenic may be by inhalation or skin contact, the most common manifestations are dermatologic. Arsenic trioxide dust dissolves in the moisture of skin folds and mucous membranes to cause inflammatory changes. Inhalation of excessive amounts of dust will lead to perforation of the nasal septum. The author indicates that gastrointestinal and neuritic alterations have been reported on some occasions in the past 20 years, but most reports of systemic involvement arising from occupational exposure predate contemporary literature. Cases of occupational cancer involving skin and respiratory passages have been reported.

Cases of arsenic intoxication have been treated with dimercaprol (BAL). Hyperpigmentation, if present, has not responded to this drug, nor has toxic hepatitis or cases of the associated aplastic anemia.

The author gives 34 references to the study of chronic arsenic intoxication.

Origin of Pneumonokoniosis

"The Origin of the Term 'Pneumonokoniosis.'" By A. Meiklejohn. *British Journal of Industrial Medicine*. Vol. 17, No. 2. April 1960. Pp. 155-160.

PNEUMOKONIOSIS (pneumonokoniosis or pneumoconiosis) is a term that has frequently been used in the literature in a discussion of dust diseases of the lungs. The nonmedical man has often been confused as to the definition and origin of the term.

Pneumoconiosis is a term used to describe a variety of lung conditions involving inhalation of dust. It simply means there is dust in the lungs. These conditions may or may not be disabling.

Prof. F. A. Zenker of Erlangen, Germany, introduced this term in 1867. The author has translated into English the original German articles describing a condition which he called *siderosis* (due to the inhalation of iron oxide dust).

In Zenker's paper "Iron Lung—Siderosis Pulmonum," nomenclature is discussed, and the generic term *pneumonokoniosis* is introduced. It may be of interest to readers to quote the conclusion of this article, in which many terms used in describing dust conditions of the lungs have been coined.

"For this new form of disease, I coin, by analogy with anthracosis (which designation will soon be adopted generally) the name *siderosis* of the lungs and one can then designate as *phthisis siderotica* the most serious ulcerated forms, as illustrated by our first case (red phthisis as opposed to black phthisis).

"After we have learned to recognize anthracotic and siderotic lungs, two varieties of the disease, which are identical in all essential points with respect to mode of origin and symptoms and differ only in the nature of inhaled dust, we

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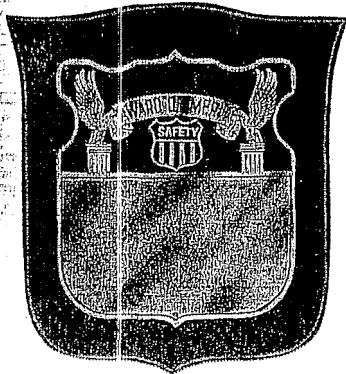


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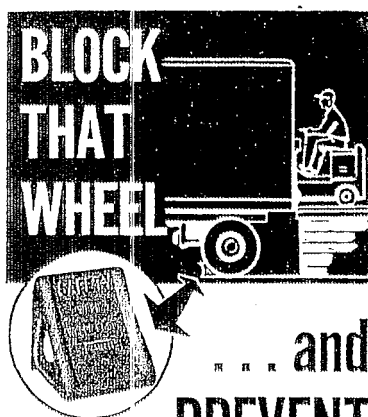


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may subsequently expect that still other comparable disease will be added (for example, that due to the inhalation of tobacco dust that will be established in the next paper).

"It will then be necessary to embrace under a single title all these essentially identical forms of disease. Instead of the long-winded designation employed by me as the title of this article, which appears to me to express best the essence of the matter, the name pneumonokoniosis recommends itself. One would then require distinguished individual forms as pneumonokoniosis anthracotica, siderotica, etc. (or just briefly anthracosis, siderosis)."

Siderosis is due to the inhalation of large particles of iron oxide and produces a red pigmentation, which may produce an X-ray shadow somewhat similar to silicosis. It is nondisabling.

Hazards of Microwave Radiations

"Hazards of Microwave Radiations." By Kuo-Chiew Quan, B. E. E., M.D. *Industrial Medicine and Surgery*. Vol. 29, No. 7. July 1960. Pp. 315-318.

THIS is an excellent review of general applications and effects of microwave radiation.

The author points out that the human body is capable of dissipating heat at a rate on the order of 0.01 to 0.1 watts per square centimeter body surface. The human body is able to absorb between 100 and 1,000 watts of energy from an outside source, such as microwaves, and still maintain an equilibrium



"That's the boss... he's hot-tempered, so don't do anything to upset him."

but at an elevated temperature. When the rate of energy absorption is increased, there will be a continuous temperature rise which will ultimately lead to death.

The radar bands now in common use are the "S" band with a frequency of 2,880 megacycles and a wave length of 10.4 centimeters, and the "X" bands with a frequency of 9,375 megacycles and a wave length of 3.2 centimeters. Investigators have reported that high-intensity 10-centimeter microwaves have killed animals, such as rabbits and rats exposed in a constant 3,000-watt field for 22 to 75 seconds.

Death is attributed to the general increase of body temperature which leads to thermo-paralysis of the respiratory center. Certain tissues of the body are not equipped for heat dissipation and temperature regulation. Examples of these are the eye and the hollow viscera—the gall bladder, urinary bladder, and parts of the gastro-intestinal tract.

Only one controversial fatal case has been reported of accidental exposure to microwaves.

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