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POSSIBLE CHRONIC INTOXICATION BY MANGANESE. *M. Kaffman and S. Donoso. Revista Médica de Chile, vol. 70, p. 708 (Sept. 1942).*

Kaffman and Donoso report that a man aged 64, three months before hospitalization, developed symptoms indicative of manganese poisoning. He had worked in a mine warehouse, and there was some probability that he had had contact with manganese. The disorder took an unfavorable course and the patient died. The microscopic pictures of the brain suggested two possible diagnoses: (1) vascular cerebral syphilis of the noninflammatory type as described by Alzheimer and Nissl and (2) chronic intoxication by lead or manganese, the two conditions causing almost the same microscopic changes. On account of the war the activity in the manganese mines has increased greatly and inspection revealed that the incidence of manganese poisoning is comparatively high among the workers. In one mine 15 of a total of 200 workers had become completely incapacitated by manganese poisoning. The men worked without masks in an atmosphere densely charged with manganese dust. In other mines no cases of poisoning were apparent. Nearly all the miners with manganese poisoning presented the typical disturbances in their walk. Next in importance are the psychic symptoms in the form of attacks of excitation, depression, unmotivated laughter and even true demented states.—*J. A. M. A.*

ELECTRON MICROSCOPY ON ASBESTOS DUST AND ON LUNGS IN ASBESTOSIS. *J. Kühn. Archiv. für Gewerbepath., vol. 10, p. 473 (April 16, 1942).*

Kühn says that because the asbestos used in factories is mostly serpentine (chrystotile) asbestos and not so much hornblende asbestos, it was generally believed that the asbestos substance found in lungs with asbestosis is chiefly serpentine asbestos. Studies by Sundius and Bygdén disclosed, however, that only hornblende asbestos is demonstrable in the lungs, which seems to suggest that serpentine dust is decomposed in the tissues. Kühn used the electron microscope to study form, size and structure of asbestos dust and the asbestos found in the lungs. It was possible to detect a considerable number of asbestos dust particles that were below the threshold of the ordinary microscope. The needles of chrysotile asbestos appear under the electron microscope curved, clear and transparent. The needles of hornblende asbestos are rigid, and curved pieces are rare; their diameter is usually greater than that of serpentine (chrysotile) asbestos. Needles were isolated from 3 lungs with asbestosis. Their examination under the electron microscope disclosed size and form but did not aid in deciding whether the asbestos was chiefly of the serpentine or of the hornblende type. For this reason it was decided to employ the photomicroscopic determination of the refraction exponent as suggested by Sundius and Bygdén. This method revealed that the large asbestos needles isolated from the lungs were of the hornblende type. It is concluded that serpentine asbestos is decomposed in the lungs and is the essential cause of fibrosis. If asbestosis lungs are macerated with nitric acid and hydrogen peroxide, not only are free asbestos needles obtained but also asbestosis bodies. Hornblende asbestos shows no signs of decomposition by the organism either in the free needles or on the asbestosis bodies.—*J. A. M. A.*

DANGER TO THE LUNGS FROM ALUMINUM DUST: *K. H. Jötten and W. Eickhoff. Arch. f. Hyg. u. Bakt., vol. 127, no. 5-6, pp. 344-367 (1942).*

Although aluminum dust has long been regarded as comparatively non-injurious to the lungs, several cases of lung disease, some fatal, have recently been reported in the aluminum industry.

A survey of the earlier literature emphasizes the distinction between "aluminosis" and true silicosis. "Aluminosis" is characterized by the symptoms of bronchial catarrh, inflammatory cell proliferation, and X-ray evidence of diffuse fine stippling, but no fibrosis, and this concept has been confirmed by animal experiments by Jötten and by Ehrismann in 1939; in these experiments, animals exposed for several weeks to an atmosphere containing 50–100 mgm. of aluminum bronze dust per cubic metre of air showed no significant pathological changes.

Recent investigations by Goralewski, however, have revealed a high incidence of symptoms of respiratory and gastrointestinal disturbance among aluminum bronze workers, including three cases of spontaneous pneumothorax. Clinical findings were slight in comparison with the severity of subjective symptoms, which also have no relation to the duration of work. The increased incidence during the last two years is attributed to changes in the process, involving the production of a greater amount of dust, the particles of which are much finer and are no longer protected by a film of aluminum stearate caused by the former addition of stearine during the stamping process.

The authors regard "aluminum lung disease" as a chemical, not mechanical, reaction, the aluminum dust being ionized during contact with the saline of the lung tissue fluids to compounds which encapsulate the particles. Among preventive measures recommended is the inclusion of "aluminum lung" in the category of scheduled diseases.—*Bull. of Hyg.*

THE SYMPTOMATOLOGY OF ALUMINUM PNEUMOCONIOSIS. *G. Goralewski. Arch. f. Gewerbepath. u. Gewerbehyg., vol. 10, no. 4, pp. 384-408 (Dec. 30, 1940).*

This clinical study (which will be supplemented later by animal experiments) of the effects of exposure to aluminum dust includes 125 workers, male and female, at the Frankfort Bronze and Aluminum Factory; these are divided into three groups.

1. Only indirectly exposed (packing —13).
2. Occasionally directly exposed (s painters, women in the weighing room—
3. Directly exposed (stamping, smel

The investigation includes clinica blood sedimentation and lung functio apply, and where possible, sputum Clinical examinations shows a high inci atory respiratory disorders, espec attacks of bronchitis. Dry cough, dysp and loss of weight were the chief syr gastrointestinal disturbance was also frequen

No correlation was observed betv duration of exposure, but most onset had occurred within the last linical signs did not correspond i ographical appearances; in only a prolonged expiration and bronchitic r blood sedimentation rate was norma (44%), slightly increased in 29 (23. increased in 24 (19.2%), test not perfor Lung function tests, being less exter ly intended, were not regarded as owed in 44 cases (35.2%) a lung vol the lower limit of normal, and in 27 (21 vital capacity.

X-ray examinations. Results were c

(1) Nil (i.e. changes observed not as m dust).

(This group comprised 58 workers (whom had never been exposed to alu indirectly, and 40 directly; 19 of th tuberculous lesions, others emphysem chitis, cardiac lesions, etc., condition the high incidence of an increased bloc rate in this group.)

(2) "Significant," 39 cases (31.2%)

(3) "Marked," 17 cases (13.6%).

X-ray appearances in these two gr acterized by increased striation, with deposits.

In group 2, three patients had had indirect and 31 direct; eight showed tul one of recent origin; all those in Gr directly exposed for periods from und years; two were diagnosed as tube

(4) "Well-developed"—four cases bilateral and symmetrical reticular larger and more numerous deposits; a directly exposed for 1–5 years; one being tuberculous.

(5) "Intense"—three cases (2.5% pearances varying from general dif large conglomerations. All these h exposed for periods of 11–20 years.

(6) "Special cases" difficult to dia (3.2%) showing marked abnormalitie

Only gasoline and other petroleum naphthas were used in fabricating rubber boats. Although the health hazard was not severe, one plant was considering ventilation to reduce vapor concentrations to about 100 p.p.m.

The production of Buna N rubber was also investigated because of the use of acrylonitrile as a raw material. The opportunities for exposure to this poison are discussed, and certain precautions are recommended.—*William Franklin.*

CONTROL OF SOLVENT EXPOSURES IN THE RUBBER INDUSTRY. *T. R. Thomas and B. D. Tebbens. Indust. Med., vol. 12, no. 4, pp. 255–259 (April, 1943).*

This article is the same article which appeared in the March, 1943 issue of *Heating, Piping and Air Conditioning* under the title "Ventilation for Control of Solvent Exposures in Fabricating Rubber Military Equipment." The latter article is abstracted elsewhere in this section.—*Leslie Silverman.*

SPRAY PAINTING CREATES HEALTH HAZARDS. *Illinois Labor Bull., vol. 3, no. 9, pp. 14–15 (March 31, 1943).*

Spray painting adds new health hazards besides magnifying the dangers of brush and dip painting. These hazards are discussed and it is pointed out that solvents which show no immediate toxicity have a narcotic action which makes the worker more prone to accidents. Health safety limits for solvent vapors are usually at least a ten times lower concentration than the explosive limits (which range in whole per cents).

The remainder of the article discusses control measures: 1) In general, if the sprayer must enter the spray area he must have in addition to exhaust ventilation an air-supplied respirator and additional protective clothing. 2) The booth must be large, deep (to prevent excessive backlash) and fireproof. 3) Exhaust and spray disposal. An air velocity of 150 linear feet per minute into all openings is recommended, as well as a water wash system or collector plates. 4) Spraying practice. The spray must not be under unnecessary pressure and should be directed toward the exhaust. Vertical articles should be placed at an angle. 5) All drying methods should have good exhaust ventilation. 6) Dermatitis can be prevented by adequate clothing and the use of skin creams. 7) Fire protection. Most important here are good housekeeping and safe storage of materials.—*John C. Carlisle.*

ENTILATION OF SEWAGE SYSTEMS. I. GASES FORMED IN SEWAGE SYSTEMS. *Ya. Ya. Zvyaginskii. Khim. Referat. Zhur. No. 12, p. 62 (1940).*

A review of the domestic and foreign literature, regarding the composition of sewage gases and the methods and conditions for natural and artificial ventilation. Gases in the sewage systems should be analyzed systematically, and ventilation methods should be based on the tolerable concentration of noxious gases.—*Chem. Abstrs.*

HEAT AND VENTILATION IN AIR RAID SHELTERS. *William J. McGuinness. Heat., Pip. & Air Cond., vol. 15, pp. 193–196 (April, 1943).*

This article gives the requirements for heating and ventilating air raid shelters. The various types of bombproof and splinterproof shelters are shown. The bombproof type is too expensive to construct, hence the most common type is the splinterproof. Shelter size is fixed by number of occupants, no more than 50 people should be placed in the same room. Space and volume requirements for overground and underground shelters are given in a table. Heat requirements are low because of the number of occupants, however, heat losses in England are different from ours because of climatic conditions. On this basis an underground shelter is preferable for American climatic conditions because of the lower ground temperatures which aid in heat loss maintenance.

Ventilation requirements are given and the various types of systems employed are illustrated. Mechanical systems with filtration are recommended.—*Leslie Silverman.*

WARTIME OPERATIONS EMPHASIZE INDUSTRIAL HYGIENE PROBLEMS OF ASBESTOS INDUSTRY. *Illinois Labor Bull., vol. 3, no. 8, pp. 10, 11 and 22 (Feb. 28, 1943).*

The control of asbestosis must be an engineering control because there are no medical means to detect the disease until much harm has been done. Engineering control consists of two important principles: 1. Adequate exhaust. 2. Good housekeeping. By experiment it has been estimated that if the air contains less than 5,000,000 particles of asbestos per cubic foot there is small chance of the workers developing asbestosis. The article lists the procedures in the manufacture of rigid and of textile asbestos products and shows that further protective measures are still needed in most plants.—*John C. Carlisle.*

AN INVESTIGATION OF DUST SUPPRESSION IN THE PITTSBURGH SEAM. *D. H. Davis and G. R. Gardner. Am. Inst. Mining Met. Engrs., Contrib. No. 125, 13 pp. (1942).*

Use of H_2O on coal-cutting machines reduced dust 26%. Addition of wetting agents reduced dust as much as 77%. Emulsion-forming oil was most effective and cheapest.—*Chem. Abstrs.*

HYGIENIC DISPOSAL OF COLLECTED DRY DUSTS. *C. A. Snyder. Ind. Med., vol. 47, pp. 59–60 (Jan. 1943).*

An objection to dry dust collection is the possibility of recirculation of part of the collected dust while unloading the collector hoppers. A simple wet disposal unit is described, by which the dust is sufficiently wet before it is dumped, to restrict greatly the quantity of free dust.—*Ind. Hyg. Found.*