

METAL FUME FEVER

PLAINTIFF'S EXHIBIT

MET-887

It was generally believed by earlier observers that the syndrome known as metal fume fever, as well as so-called spelter shakes, brass founders ague, zinc chills, and brass poisoning, was due to zinc inhaled as a metal oxide fume. The chief industries involved were brass or bronze foundries, zinc ore smelters, and those engaged in welding zinc and its alloys, in brasing metals and metallizing with zinc.

Later studies have shown that the fumes of other metallic oxides, antimony, arsenic, manganese, lead, copper, beryllium, magnesium, and probably others, will produce similar episodes of chills and fever.

The symptoms usually occur several hours after exposure, and are aggravated by chilling of the body. The patient may complain of dryness of the throat, some tightness in the chest followed by a dry cough, and occasionally nausea and vomiting. The fever may rise to 103°F., sometimes higher. The patient usually recovers on the day following the chill. No fatalities have been reported.

Prevention depends upon adequate engineering and medical programs. During an eight-hour day, exposure should not exceed 15 milligrams per cubic meter of air. Suitable exhaust ventilation of the work area is essential.

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SILO FILLER'S DISEASE

In 1914, Hayhurst and Scott reported the death of four persons occurring apparently within about five minutes after their entering a partly-filled silo. Chemical analyses of the silo gases indicated an excess of 35% carbon dioxide gas. Under ordinary conditions about 0.03% of the gas is found in the air. Since that time numerous deaths—all during the autumn months—have been reported attributed to asphyxiation by carbon dioxide given off from fermenting ensilage.

Another hazard in silo filling frequently referred to as a form of silo disease, results from exposure to the oxides of nitrogen practices in recently filled silos. In 1956, Lowry and Schuman reported findings of bronchiolitis obliterans. Two of the patients died, and autopsy disclosed the classic pathological findings. Other similar cases have been recently reported. So far there is no specific treatment for resulting lung pathology. The maximum permissible safe concentration for the oxides of nitrogen is 40 parts per million for an eight-hour daily exposure.

Prevention depends upon a wider recognition of the hazards involved, and adequate ventilation. People and animals should not be permitted to enter spaces adjoining a silo until ten days after the filling operations are completed.

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Also responsible for the Industrial Health Series of booklets published by the Health and Welfare Division of the Metropolitan Life Insurance Company.

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65. Wrote a manuscript for the second edition of the "Manual de Therapeutica Clinica" on therapy for beryllium, carbon monoxide, electric shock, carbon tetrachloride, benzene, arsenic and cyanides. This manual 1953

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