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EDITORIAL

DEATHS DUE TO CADMIUM OXIDE FUMES FROM SILVER SOLDER REPORTED

Acute illness with pulmonary inflammation and death from exposure to cadmium oxide fumes have been described repeatedly in the literature. Aristotle's observations were recorded in the fourth century B.C., but the history of occupational exposure to cadmium extends back more than 4,000 years, into the antiquity of the bronze age. The toxicity of freshly generated cadmium fumes is so great that they are reported to have received consideration as a chemical warfare agent.

An Industrial Hygiene Digest abstract, 24:6 on p.13, June 1960 by G.H. Vance was entitled, "Cadmium Exposures in Silver Soldering Operations." It will thus come as no surprise to Digest readers that cadmium fumes from silver soldering may cause illness and death.

The California State Department of Public Health's Bureau of Occupational Health has just notified the Industrial Hygiene Foundation, in a unpublished report, of two such deaths (both substantiated by pathological investigation) and of the probable existence of other nonfatal cases. This notification of a death in California and another in Utah was confirmed by a press release from the Division of Occupational Health, U.S. Public Health Service, on March 1, 1966.

Symptoms of severe, acute poisoning from cadmium have been described as being almost identical to those which characterized metal fume fever generally, except that in the case of cadmium poisoning, there is usually chest pain, as well, within 24-36 hours; cough and dyspnea also occur within 20-30 hours. Physical examination of the chest is of little assistance in early diagnosis or prognostication, but chest X-rays may show scattered patchy infiltration of the lungs.

Because presence of cadmium in material being welded or soldered is often unknown, a high index of clinical suspicion is required to identify illness and death from cadmium fumes.

Of 20 deaths from acute cadmium poisoning which have been reported officially in the United States since 1900, only three have appeared in the medical literature since 1956. The report of two new deaths in 1966 suggests that use of brazing with silver alloy containing cadmium without adequate industrial hygiene controls may be increasing or that illnesses and deaths due to the alloy have previously been unrecognized. The first known incident involving this particular alloy was a nonfatal case reported in 1958. The State of California has taken steps to ensure proper labeling and education of workmen, particularly welders, on the extreme hazard involved and how to control it. Similar efforts are reportedly being made in several of the states, and the Division of Occupational Health, U.S. Public Health Service, Washington, D.C. is currently engaged in considering how best to implement recommendations in the Frye Report, "Protecting the Health of Eighty Million Americans, A National Goal for Occupational Health", concerning control of potential hazards to the public as a result of expanding utilization of industrial technology in home workshops, where there is no knowledge of industrial hygiene controls and complete reliance on product information supplied by the manufacturer. Interested parties may wish to contact Dr. Murray C. Brown, Chief, Division of Occupational Health, U.S. Public Health Service, Washington, D.C., for further information and guidance.

NOTE: A critical review of the literature on "Acute Occupational Cadmium Poisoning" now being prepared may be available soon to Foundation members upon request.

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