

experimental work was instituted at the Saranac Laboratory, New York almost three years ago. Animals have been continuously exposed to high concentrations of air-borne dust collected in our Amsco Chicago Heights cleaning room since that time. The results obtained indicate no evidence of silicosis in any of those sacrificed thus far. The usual reaction to inert dust has been noted and x-ray shadows in the animals' lungs are comparable to those observed in our employees. These findings have been supported by the analytical work of our industrial hygiene laboratory and also by a recent autopsy in an employee who has been receiving compensation for "silicosis" but who died from cancer of the stomach. Post mortem examination of his lungs revealed no evidence of silicosis although his x-rays had previously shown a mild degree of nodulation.

This case demonstrates very clearly the importance of correlating medical findings with engineering studies.

LEAD

In certain foundries the greatest hazard arises from toxic fumes liberated in melting and pouring of various metals such as lead, chromium, magnesium and manganese.

"Lead poisoning" is a disease which dates back to ancient times. Many cases are on record where the condition has arisen from unusual sources - such as the drinking of wine from old pewter vessels, lead in paint used on children's toys, lead in cosmetics, etc., but these are mostly isolated instances and research in recent years has resulted in much more accurate diagnosis and reasonable thinking on the subject.

It is now well established that there is a difference between "lead absorption" and "lead intoxication," and the distinction is extremely important particularly in industry. Lead absorption simply means that lead is present in the body in unusual amounts without evidence of symptoms or disability. When this absorption reaches a sufficient degree, symptoms of poisoning or "intoxication" appear. This may vary in different individuals and also with the length of exposure. The common signs and symptoms are cramps in the abdomen, constipation, nausea, weakness, headaches, and, if the exposure is sufficiently heavy, prostration, stupor, violent delirium, convulsions, and even death. Sometimes palsy, or paralysis (wrist drop) of the extensor muscles of the hand and arm, result.

Lead can enter the body in three ways - by ingestion or swallowing, inunction or through the skin and inhalation, or via the lungs. The first two of these are relatively unimportant, but the inhalation of lead fumes or dust is something to be reckoned with. It is the commonest cause of lead absorption and lead intoxication.

Lead is so universally present that there is a "normal" rate of excretion in the urine. Traces can be found in the urine of new born infants. Definite standards of lead excretion have now been established and the examination of routine samples of urine from workers exposed to lead is generally accepted as the most valuable means of determining whether employees are being affected or not. The older tests such as Basophilic Aggregation and Stippling are of value in demonstrating the presence of lead absorption, but these cells are found to be increased in a number of other conditions such as anaemia, and are not truly diagnostic.