

tion constitute an additional item in meeting prices of competitors. That Brake Shoe has accepted this challenge is direct evidence of its sincerity of purpose. This program has placed the Company in the forefront of those far-sighted organizations who realize that industrial health is a "must" in any successful enterprise.

But the dust problem is only one of the hazards with which we are confronted. In the brass foundries of the National Bearing Division, lead poisoning has been one of the most serious occupational diseases with which we have had to contend. Melting operations, in which lead oxide fume is liberated, constitute one of the most prolific sources of exposure to this toxic metal. Dust from machining procedures in the manufacture of brass products also presents a serious risk. The history of lead intoxication dates back many centuries and the story is a fascinating one. For our consideration at the moment however, we have time only to review a few of the main diagnostic features.

Clinical signs and symptoms result from the inhalation of lead fume and dust. While a relatively insoluble metal, certain compounds of lead are readily soluble in body fluids. They are then absorbed through the circulation in the lungs into the blood stream and nature tries to handle the toxic materials by a complex chemical process which stores the lead in the various tissues of the body, principally the bones. The body attempts to eliminate lead gradually but when, through excessive exposure, the absorbed products cannot be stored or "immobilized" quickly enough, intoxication or "poisoning" results. Thus lead appears in the urine and the blood stream and these two media therefore provide an excellent source for evaluating the severity of the disease.

As Mr. Weber will explain, analysis of the urine and blood for lead and comparison with established standards furnish an efficient method for determining the presence of this occupational illness.

Symptoms consist of pallor, abdominal cramps, severe constipation, pains in the joints and anaemia. If exposure is severe enough, the nervous system may be affected resulting in wrist drop, convulsions, coma and death. Fortunately, the latter symptoms are seldom seen today because of better recognition of the hazard and elimination of exposure through exhaust ventilation in the working places.

A "lead line" on the gums has been described as one of the classical signs for many years. While it still may be recognized it is not of very frequent occurrence any longer because of improvement in dental care.

We have been successfully controlling lead intoxication in our plants since 1942 through our medical and hygiene program so that it is now becoming a thing of the past. For example, in one small foundry in the middle west, we used to have 14 or 15 cases of lead poisoning a month. We have had no cases in this plant in the last eight years, and only an occasional one now where we formerly had many in other locations.

I have been requested to say something about back injuries and back sprains as an occupational condition. As mentioned previously, we in the Medical Department, have little to do with injuries as these are under the control of the Safety Department. However, we are concerned