

## CONTENTS

### LABOR SESSIONS

|                                                                      |                         |    |
|----------------------------------------------------------------------|-------------------------|----|
| Occupational Health Hazards—Environmental.....                       | Paul E. Toth            | 3  |
| Occupational Health Hazards—Medical Aspects.....                     | Herbert K. Abrams, M.D. | 5  |
| Some Observations on Occupational Dermatoses.....                    | Paul P. Boswell, M.D.   | 12 |
| The Year's Progress in Labor Safety.....                             | Lloyd D. Utter          | 16 |
| Safety Is a Man Size Job.....                                        | J. E. Trainer           | 17 |
| Safety Is Our Challenge.....                                         | George M. Harrison      | 22 |
| Presentation of Labor Safety Awards.....                             | Lloyd D. Utter          | 25 |
| How We Work On a Joint Basis.....                                    | Jack Moyer              | 28 |
| How We Work On a Joint Basis in<br>Accident Prevention Programs..... | Thomas J. Cain, Jr.     | 29 |
| How We Work with Labor Unions in Oregon.....                         | Wm. A. Callahan         | 30 |
| Other Practical Approaches for<br>Working Together in Safety.....    | Mrs. Pauleen J. Field   | 34 |
| Officers of the Labor Conference, 1961-62.....                       |                         | 39 |
| Other Volumes in 1961 National Safety Congress Transactions.....     | Back Cover              |    |

## OCCUPATIONAL HEALTH HAZARDS — ENVIRONMENTAL

By PAUL E. TOTH

Eng., Michigan Department of Health, Eloise, Mich.

It has often been said that anything taken into the body in too large a quantity may be considered a poison.

The problem then becomes one of defining the limits or quantity of substance a person can take into his body without producing deleterious effects on his health and well-being. For many of the dusts, gases, vapors, and fumes encountered in the environment of our workrooms in industry, there are limits that are referred to as maximum allowable concentrations (MAC). These limits are based on an eight-hour day exposure and are nothing more than bench marks or guides which enable an industrial hygienist to properly evaluate the extent of an exposure and to determine whether or not a potential health hazard is present.

The list of maximum allowable concentrations can be obtained from the American Conference of Governmental Industrial Hygienists, 1014 Broadway, Cincinnati 2, Ohio, or if you have access to the American Industrial Hygiene Association Journal of August, 1961, you will find it there.

When we say these values are bench marks, we mean that more factors are considered in evaluating an exposure than just the finding of a certain amount of contaminant in the air. Factors such as skin absorption, accumulative effect or sensitizing properties of the suspected material must also be considered for proper evaluation of the exposure. Now let us consider but a few of the many toxic materials one may be exposed to in different industrial environments.

### Lead

Lead, I'm sure, we are all familiar with, yet it is this familiarity that gets us into trouble with this metal, because we choose to forget the fact that it is an accumulative poison. The maximum allowable concentration for lead is 0.20 milligrams per cubic meter, and the little we take into our sys-

tem today that is in excess of this value is added on to the little we take in tomorrow until the body can no longer safely hold the burden. Chronic lead poisoning will develop among employees exposed during the course of their work to excessive levels of lead dust or fume. Clinical manifestations may appear as loss of appetite, nausea, vomiting, general sickness, irritability, dizziness, and headache, and unless the afflicted person has biological tests taken for lead absorption, the diagnosis may be missed completely until more severe symptoms develop.

Taking appropriate action when blood lead levels indicate an absorption of 0.08 milligrams of lead per 100 grams of whole blood is essential for the prevention of lead poisoning. Recommended action is to remove the employee from further exposure and to review the area of operation to make sure that all engineering controls and safety precautions are satisfactorily in use. Obviously good engineering control is required to prevent the lead from being dispersed into the workroom. In addition, good personal hygiene is required to further reduce exposure. Finally, biological tests, preferably blood leads, are required to ascertain any shortcomings in either of the first two control measures.

### Cadmium

Cadmium metal, either as a plating on parts or the solid metal itself, will volatilize when heated above 600°F to produce a toxic brownish-yellow cadmium oxide fume which has no pronounced odor or immediate effect but its inhalation may induce after a few hours or much less depending upon the concentration of exposure a painful and sometimes fatal pneumonitis. The maximum allowable concentration of this material is listed as 0.1 milligrams of fume per cubic meter of air and only by means of a well-engineered exhaust system are we able to control any operation generating the fume to a value below this level.