BRITISH AND FOREIGN OFFICIAL PUBLICATIONS

THE PRESIDENT'S NATIONAL LABOR CONFERENCE

(U.S. Department of Labor, Division of Labor Standards (1946). Bulletin No. 77.)

This publication contains the minutes of a conference held in 1945, the Summary Report to the President, and proposed representation procedure and agenda for the conference. The latter consisted of examination of the major causes of industrial strife and the methods of reducing them, including the principle of collective bargaining in matters of wages, hours, and working conditions, the acceptance by the workers of the right of the management to direct the enterprise, and the use of existing machinery, such as National and State Labor Relations Act, and negotiation between employer and Union. President Truman's opening address, on the aims of the conference and the urgent need for minimizing industrial disputes, is also included. Committee reports adopted by the conference deal in detail with collective agreements and the strengthening of the Conciliation Service of the U.S. Department of Labor and the reorganization of its Division of Arbitration. There are statements by representatives of managements and workers on collective bargaining, management's right to manage, and representation and jurisdictional subjects. There are reports of the Public Hearings Committee, in the fourteen hearings of which the interests of independent unions, small businesses and consumers, etc., were examined. Finally comes the conference directory of delegates, advisers and committees, and other relevant information. *J. N. Agate.*

OCCUPATIONAL DISEASES CONTROL

(Baltimore City Health Department, Industrial Health Series, No. 1.)

This is a symposium of the schedule of occupational diseases, the rules and regulations for their control and prevention, and the penalties for failure to comply with these regulations, which apply under the Occupational Disease Law of the State of Maryland, U.S.A. Sections on the reporting of occupational diseases and the industrial hygiene services available in Baltimore are also included. Under the Schedule of Occupational Diseases employees in certain listed processes, or subjected to a risk of certain specific diseases, are deemed to be employed in extra-hazardous work, and compensation is then payable for any disability or death caused thereby. The listed diseases are: anthrax; lead, zinc, mercury, phosphorous and arsenic poisoning and their sequelae; wood alcohol poisoning; poisoning by benzol or nitro-, hydro-, hydroxy- or amido- derivatives of benzene; by carbon bisulphide or any sulphide, by nitrous fumes, by nickel carbonyl, or the sequelae of any of these; poisoning by dope, formaldehyde and its preparations, hydrocyanic acid, chlorine, ammonia, cadmium or manganese; chrome ulceration or dermatitis or the sequelae; epitheliomatous ulceration from any of the usual industrial agents; glands; compressed air illness or its sequelae; certain miners' diseases; cataract in glassworkers; poisoning from radium, radioactive substances or x rays; poisoning from methyl chloride or other halogenated hydrocarbons, carbon monoxide, or sulphuric, hydrochloric, or hydrofluoric acids; certain lesions due to petroleum products and their fumes; disability from blisters, abrasions, bursitis or synovitis; dermatitis venenata; silicosis; asbestosis. Recent additions to the list are: respiratory, gastro-intestinal or eye disorders due to contact with antigenic substances; occupational tularemia, brucellosis, psittacosis, leptospirosis, rabies, or Rocky Moun-

tain spotted fever, and selenium, tellurium, and fluorine poisoning. In each case the process or occupation in which the hazard can be expected to occur is laid down. *J. N. Agate.*

THE TOXICITY OF MOLYBDENUM

By L. T. Fairhall, R. C. Dunn, N. E. Sharpless, and E. A. Pritchard

(U.S. Public Health Service, Public Health Bulletin, No. 293. 1945.)

Molybdenum steels are used for munitions, high-pressure boiler plates, and tool-making, and are extremely tough; molybdenum can be used to make alloys with tungsten and chromium; in chemistry it is used as a catalyst, and in the making of pigment colours of great brilliance; it is used in vitreous enamelling, in high temperature furnaces, and in radio valves. The metal is hexavalent and occurs naturally as lead and iron molybdates, but mainly as the sulphide, molybdenite, which physically resembles graphite. There is no hazard to be expected in the mining of the ores, but in their smelting there is exposure to calcium molybdate dust, and in the rolling of hot billets exposure to molybdic oxide fumes.

Estimation of molybdenum is best done by a colorimetric method based on the red-orange colour given with thiocyanites in acid solution by reduced molybdenum, with an extraction medium to intensify the colour. Details of the method are given in this report. Molybdenum is widely distributed, although only in fractions of a milligramme per kilo, in both plant and animal tissues, including human liver and spleen and carcinoma tissue of the breast. Some plants contain enough to be injurious to herbivores. Previous animal experiments on the toxicology are reviewed; these had been confined to ingestion and intravenous injection.

In the experiments reported here, dosage was given by inhalation to simulate toxic hazards in industry, by ingestion to follow the course of absorption and excretion, and by intraperitoneal injection to determine if the substances are irritant or inert. Molybdenum trioxide, calcium molybdate, and ammonium molybdate proved fatal to rats and guinea pigs when given in doses of 1,200 to 6,000 mg. per kilo, if given orally into the back of the animal's throat by a syringe; with increasing dosage there was increasing storage in the liver and other tissues. Doses of one-tenth of the above produced fewer fatalities; 6,000 mg. of molybdenum as molybdenite did not cause death, and this was also the case in exposure to the dust of the molybdenite. Dust of this compound and of calcium molybdate and molybdenum trioxide were introduced into a chamber by means of an elutriator. The last two reagents in concentrations of 5 mg. per cubic foot were very irritating, caused loss of appetite, loss of hair, diarrhoea, inco-ordination, and death. Animals were exposed to molybdenum trioxide fumes produced by arcing electrodes of the metal, but no fatalities occurred, which was unexpected. Experiments on the solubility of molybdenum trioxide were then done to elucidate the problem; in the fume state it is most soluble.

Intraperitoneal injection of soluble molybdenum compounds, particularly molybdic oxide and ammonium molybdate, produced a high mortality in guinea-pigs when given in doses of 400 to 800 mg. per kilo. Respiratory paralysis and convulsions were seen. Radiographs suggested that molybdenite and calcium molybdate remained *in situ* but molybdenum trioxide was dissolved and redistributed. Storage of molybdenum compounds is transient and takes place mostly in the kidneys and bones, and to some extent in the spleen. Absorption