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ETHYL CORPORATION
MANUFACTURING AND TRAFFIC DEPARTMENT

J. H. SCHAEFER,
GENERAL MANAGER.

PLEASE ADDRESS REPLY
TO: CHRYSLER BUILDING
405 LEXINGTON AVE., NEW YORK CITY

November 22, 1943

Dr. R. A. Kehoe
College of Medicine
University of Cincinnati
Eden & Bethesda Avenues
Cincinnati, Ohio

Dear Dr. Kehoe:

Attached hereto for your information and files is
Bulletin No. 32 dated November 19 from the Lead Industries
Association covering lead hygiene and safety.

Very truly yours,

J. H. Schaefer

Per: *J. J. Biehl*

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Att.

LEAD INDUSTRIES ASSOCIATION

420 LEXINGTON AVENUE

NEW YORK 17, N. Y.

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November 19, 1943

LEAD HYGIENE AND SAFETY
BULLETIN NO. 32

To Members of the Lead Industries Association:

Attached please find:

A. Notes on U.S. Department of Labor's "Principal Features of Workmen's Compensation Laws-as of September, 1943," Bulletin No. 62, (Revision of Bulletin No. 56.)

1 page.

B. Abstracts of Recent Literature on Lead Poisoning.

4 pages.

Very truly yours,

R. W. Dawson
Secretary.



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"PRINCIPAL FEATURES OF WORKMEN'S COMPENSATION LAWS -
AS OF SEPTEMBER, 1943."

We have been furnished with a copy of Bulletin No. 62, (Revision of Bulletin No. 56), "Principal Features of Workmen's Compensation Laws - as of September, 1943," issued by the U. S. Department of Labor, Division of Labor Standards.

The Bulletin consists of 20 pages and covers legislation enacted during 1943 and is a complete revision of Bulletin No. 56 which was published in January, 1943.

Copies may be obtained from the Division of Labor Standards, U. S. Department of Labor, Washington, D.C.

OCCUPATIONAL DISEASES. Report of Occupational Diseases in Connecticut for May, 1943. The total number of diseases reported was 116, of which 104 were some form of dermatitis including 87 cases from oil. Ten cases of silicosis were reported and one each of lead poisoning and radium poisoning. Conn. Health Bull., 57, 146 (June, 1943).

THE PRINCIPLES AND PRACTICE OF INDUSTRIAL MEDICINE. F.J. Wampler, Editor. The Williams & Wilkins Co., Baltimore Md. 579 pp. (1943). Price - \$6.00. This volume is intended as a text book for students and for information of physicians now called on to undertake industrial practice. Thirty-three contributors have written one or more chapters each. Under a multiple-author plan, a book inevitably suffers from lack of uniformity in treatment and from abrupt transitions, but such defects are kept to a minimum in the present volume, and the organization in general is logical. The first 7 chapters deal with the layout of a medical department, methods of hazard control, industrial health programs of governmental agencies and other organizations and other general subjects. Then follow chapters on general hazards like temperature, humidity, pressure, light, etc. Several chapters then deal with toxic chemicals, followed by one each on electricity, dermatosis, pneumoconiosis, tuberculosis, venereal disease, nutrition, care of eyes, traumatic shock and burns, and the industrial back. The important general subjects of nursing, compensation, rehabilitation, medical service for the smaller plant, and women in industry, are each given a chapter. The contributing authors are highly competent in their field, and in many cases some of the papers by the same authors already abstracted in the Digest cover the same ground as their chapters here. One exception is the chapter on Light, Lighting and Seeing, by Luceish, whose discussion of optical theory and facts have been outside our range. Altogether the book contains a large amount of valuable information for the student and physician.

1021 ANSWERS TO INDUSTRIAL HEALTH AND SAFETY PROBLEMS. J.E. Weiss, Editor, and 4 associates. Occupational Hazards, Inc., Cleveland, O., (1943). 699 pp. \$10.00. This book is really a treatise on industrial health and safety, arranged in question and answer form and will interest not only those whose questions are those asked in the titles but also those interested in learning the fundamentals of any of the fields covered. The topics treated in the individual sections are: (a) industrial skin diseases; (b) dust hazards; (c) metal poisoning; (d) toxic gases and vapors; (e) solvents; (f) miscellaneous exposures; (g) controls for airborne industrial hazards; (h) safety administration; (i) personal protective equipment; (j) mechanical safety; (k) tool protection; and (l) plant safety. About 40 forms of reports in actual use by various companies follow, and the classification of potential hazards by industries and by occupation concludes the book. Credit for the material of the book is given a number of government offices and safety associations, and an excellent feature of the book is the insertion of copious bibliographies at the end of the discussion of each subject. Each section is accompanied by numerous illustrations depicting sources of hazards and demonstrating protective measures and other matters pertaining to the subject. No advertising matter is included in the book itself, but a 112-page booklet advertising safety equipment is inserted in the back cover. This book must be added to the growing list of worthwhile volumes on health and safety.

FOREMANSHIP AND ACCIDENT PREVENTION IN INDUSTRY. A.S. Johnson. American Mutual Liability Insurance Co., Boston, Mass. (1943). 94 pp. A large share of the duty of accident prevention rests upon the foreman, and the book fills the need of a text on foremanship primarily directed to safety. The field is well covered. The first chapter deals with the position and function of the foreman, with a list of the qualifications needed. Another is devoted to causes of accident, with the distinction between accident and injury, the analysis of both, the theory of accident occurrence and principles of prevention. The various kinds of machinery and environment which may cause accidents are discussed. In this connection occupation disease and toxic materials are treated, although of necessity very briefly. The next three chapters

deal with maintenance, housekeeping and personnel control as factors in accident prevention. Under the latter heading are sections on women in industry and on protective clothing, with a table showing the uses of various items of protective clothing. In the final chapter, aids to foremen including plant safety organization, the safety engineer, first-aid and educational material are discussed. The preface says that the book "is not easy reading. In fact, it deals in technical fashion with a difficult subject." That is correct in the sense that one cannot skim through the book. The author has put the entire subject in terse, clear and forcible form, and the foreman with limited experience in the special fields of industrial hygiene and accident prevention will have no difficulty in understanding the text. In fact, he will find many sentences that "stick in" on first reading. The book is well worth careful reading by all foreman and all those concerned with accident prevention.

MANUAL ON INDUSTRIAL HEALTH FOR WAR WORKERS. Committee on Industrial Health, Massachusetts Committee on Public Safety. (January, 1943). 39 pp. The "Manual on Industrial Health for War Workers" is one of the first of its type to be published in the United States which completely embraces the subject of industrial health. A number of separate chapters have been written by a group of experts in their individual fields. The manual was prepared by the Committee on Industrial Health functioning under the auspices of the Massachusetts Committee on Public Safety and was designed for use by laymen as well as professional workers in the field of industrial hygiene. The topics discussed include occupational disease prevention, industrial medical, dental and nursing service, sanitation, nutrition, health education and safety, mental fatigue and morale, and hours of work. The material is presented concisely and in a manner easily readable even by the layman. Thus this manual finds its value not only to professional workers, but to personnel managers, safety engineers and others directly or indirectly related to the field of industrial health. An outstanding feature of this manual is the bibliography and the references which are listed at the end of each chapter. The bibliography has been selected with extreme care and offers a ready source of reference to the busy executive and professional worker. Although originally designed to assist local health committees in developing an industrial hygiene program, the manual has proven to be a condensation of most of the essential knowledge of the field of industrial health.

EFFECTS OF EXPOSURE TO TOLUENE USED AS COMPONENT OF PAINTS (PART 1). L. Greenburg and others. N.Y. State Ind. Bull., 22, 122-125 (March, 1943). The study presents data on the toxicity of toluene to 106 painters in a large airplane factory. The workers included 51 spray painters, 51 dip painters, and 30 brush painters. A group of 430 fur workers constituted a control. Air samples taken under working conditions showed that exposures ranged from 100 to 1,100 parts per million, with an average of approximately 200 parts per million. Exact environmental conditions are given, the dip room having the poorest exhaust system. Brief physical examinations were done and extensive laboratory blood studies made on all exposed workers. Results of the study include: 1. Physical manifestations, including enlargement of the liver in 30.2% of the men and perforated nasal septa (probably due to the zinc chromate in the paint) in 4.7% of the men. 2. Erythrocyte counts were low, 17% being below 4.5 million erythrocytes per cubic millimeter of blood. 3. Hemoglobin values were high, 38% having 16 gm. or more per hundred cubic centimeters of blood. 4. Absolute lymphocyte counts high, although the differentials were normal. 5. Mean corpuscular volume was high.

COMMERCIAL LEAD AS POSSIBLE INCITING FACTOR IN BRONCHIOGENIC CARCINOMA: REPORT OF TWO CASES. C.E. Black. Arch. Path., 35, 366 (March, 1943). Lead and radium belong to the same chemical family. As commercial lead contains varying amounts of radioactive substances, usually radium D, it should be considered as a possible inciting factor in bronchiogenic carcinoma when its fumes and dust are inhaled over long periods. In the two cases that Black presents there was continuous exposure to lead for many years. That carcinoma may not manifest itself until many years after exposure to irritating dusts was borne out by the cases. The first patient had recurrent attacks of lead intoxication and an amount of lead in the urine indicating that lead was actually taken into the body. At necropsy, chronic fibroid pneumonitis was found in both patients, suggesting some form of chronic irritation.

LEAD HAZARD OCCURRING DURING REPAIR OF A BURNED SHIP. W.E. Fleischer and F.J. Viles. U.S. Naval Med. Bull., 41, 386-388 (March, 1943). In the repairing of a burned ship, dust particles and lead were due to piles of debris, consisting of layers of fiberglas insulation, ash from furniture, paint, wiring, etc., and miscellaneous metal scrap. These piles of debris were carried into dumping platforms inside the ship, and then shoveled out through portholes. Most of the process was unprotected from the wind. Analysis of the debris showed a high concentration of lead due to the intense heat and reaction, during and after the fire. Samples of the air taken at the dumping and shoveling operations and in quiet air all showed concentrations above the toxic threshold. These particles were small and did not settle out rapidly. It was recommended that respirators protecting against pneumoconiosis-producing, and toxic dusts, be worn.

SCURVY CAUSED BY LEAD POISONING TREATED BY TRANSFUSION. E. Ramel and J.J. Schenk. Schweiz. med. Wochschr., 72, 364-5 (1942). Vitamin C was ineffective in relieving a case of scurvy complicating plumbism. It is claimed that the abnormally low renal threshold caused rapid excretion of the vitamin C too rapidly. The renal threshold was raised by blood transfusion and subsequent vitamin C in large doses removed the scorbutic condition. It is suggested that blood lead destroys an oxidase necessary for vitamin C fixation.

STANDARDS FOR THE PROTECTION OF WORKERS IN GAS AND ELECTRIC WELDING. New Jersey, Dept. of Labor. In general, the code is an extremely fine one. Several of the requirements call for some comment. Those sections involving control of the fume by means of dilution, involve a minimum ventilation rate of 350 c.f.m. per welder, with a minimum of three air changes per hour. Various tables in the code list the requirement for individual positive ventilation devices. The code recommends 200 c.f.m. for black iron for shops having an air space of 50,000 cubic feet and over, a rate of 225 c.f.m. for shops less than 50,000 cubic feet and a rate of 250 c.f.m. for welding in confined spaces. In all of these cases the exhaust outlet must be located within 8" from the arc or torch. Since such devices control the fumes by means of local exhaust, there is no need for an increase in air capacity, because of those different conditions. The tables also include ventilation rates to be used when the exhaust outlet is located at greater distances than 8". Such ventilation rates increase to 450 c.f.m. This latter rate would undoubtedly require a 4" flexible metal hose. Inasmuch as these are rather clumsy and do not have an adequate bending radius for all types of work, it would seem more practical to recommend an air flow of 200 c.f.m., using a smaller sized hose located nearer the work. This latter difficulty is recognized in the code with regard to work aboard ship. The recommendations involving shipyards in the code are excellent. Ventilation standards for welding on galvanized iron, steel, brass and bronze are also given. The code requires the airline respirator in connection with the spraying of lead or its alloys, with the choice of a respirator; or an individual positive ventilation device with a minimum air flow of 350 c.f.m. is allowed in connection with spraying operations of non-lead alloys. No mention is made of cadmium, zinc, or other harmful metals. The medical recommendations in the New Jersey Handbook are based chiefly on those found in the American Safety Handbook H24, published by the National Bureau of Standards, U.S. Department of Commerce, Washington, D.C. These safety practices have proved to be of value for the protection of welders.

A RAPID MICROANALYTICAL METHOD FOR LEAD IN URINE. S. Kaye. J. Lab. & Clin. Med., 28, 1171-1174 (June, 1943). Excess ammonium hydroxide as suggested by Aub and his co-workers for the precipitation and absorption of lead is unsatisfactory. Lead may, however, be totally separated from urine at pH 10 as suggested by Fairhall. The lead is then quantitatively determined by an extraction titration procedure with dithizone. A maximal deviation of $\pm$ five per cent is claimed for the method which is said to be rapid, sensitive and reliable - From Author's summary.

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TOXIC DUSTS, FUMES AND GASES IN INDUSTRY - G.E. Morris. New England J. Med., 228, 327-33 (1943). The toxicity, mode of entry and poisoning symptoms are described for antimony, magnesium, manganese, mercury, lead and radium. Volatile solvents which act as asphyxiants, irritants or metabolic poisons are also considered.

ASSOCIATION WITH POISONOUS CHEMICALS IN CHINA AND GLASS PAINTING. E. Wagner. Chem. Zentr., 1, (1941). A report on the use of salts of arsenic, lead, copper, mercury, cobalt and cadmium in glass painting, and the dangers to the workers.

STUDIES IN THE DEPOSITION OF LEAD IN BONE. I. CALCIFICATION AND LEAD DEPOSITION. F.R. Barrett. Med. J. Australia. 1, 433-435 (May 15, 1943). The rate of deposition of lead is greater in epiphyseal than in diaphyseal bone. This ratio was found to be about two. The greatest rate of deposition is at the distal epiphysis. Similarly, the deposition rate of epiphyseal calcium is about twice that of diaphyseal calcium. The simultaneous lead deposition and removal of calcium from the bones, found by the workers, have been shown to be due to accelerated decalcification of compact bone, in which there was no lead, with simultaneous calcification and lead deposition at the epiphyses.