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APRIL, 1947

INDUSTRIAL HYGIENE DIGEST

(Vol. 11, No. 4)

Literature Abstracts

- MEDICAL
- ENGINEERING
- LEGAL...decisions and trends

Industrial Health News



INDUSTRIAL HYGIENE FOUNDATION

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INDUSTRIAL HYGIENE ABSTRACTS November 1993

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FOUNDATION FACTS

Foundation Facts is a monthly news-letter issued to industrial concerns holding membership in Industrial Hygiene Foundation. The Foundation is a non-profit association of industries for the advancement of healthful working conditions.

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More Companies Join Foundation

Thirteen organizations have affiliated with the Foundation since the first of this year, including some of the nation's leading industrial concerns. These new Members are:

American Can Company	Ford Motor Company	National Steel Corp.
Anthracite Institute (32 firms)	General Electric Co.	National Supply Co.
Atlas Powder Company	Inland Steel Company	Sun Oil Company
Caterpillar Tractor Company	National Association	Sun Sand Company
Crucible Steel Company	of Fan Manufacturers	

Five States Enact "O.D." Laws; Analysis Being Prepared

Five states have enacted occupational disease compensation laws at the 1947 sessions of the state legislatures. These are: Iowa, Nevada, South Dakota, Tennessee, and Texas. Meanwhile, two states, Vermont and Montana, named commissions to study such laws and to report to their respective legislatures.

The Foundation's Legal Committee has started a factual analysis of the new laws and this will be sent to Members in the near future. Occupational disease compensation laws have now been enacted in 38 states and the District of Columbia.

Reprints Available from Transactions

The following reprints are now available to Members from the Transactions of the Eleventh Annual Meeting:

Production Comes from People.....	Admiral Ben Moreell
Acute Respiratory Infections and Their Control in Industry.....	Dr. Anna M. Baetjer
Trends in Industrial Health Administrative Practices.....	Dr. C.O. Sappington
Pulmonary Granulomatosis Occurring Among Workers	
Believed Exposed to Beryllium.....	Dr. L.U. Gardner
Human Factor in the Design of Industrial Machines.....	T.F. Hatch
Findings from Foundation Plant and Laboratory Research.....	T.F. Hatch, W.C.L. Hemeon and F.R. Holden

A very heavy demand continues for the new information circular describing the Foundation, "Production Comes from People," which was issued at the annual meeting last November. Members desiring these circulars for distribution within their organization may secure limited quantities upon request.

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INDUSTRIAL HYGIENE DIGEST

Literature and News

News Items

364 Monsanto Aiding Disaster Victims.

Officials of the Monsanto Chemical Company have announced plans for aiding employees and their families following disaster at the company's styrene plant in Texas City. Joseph R. Mares, General Manager of the Texas Division, said:

1. Monsanto will pay immediately \$1,000 to the widows and other real dependents of each employee killed. This is in addition to workmen's compensation, group insurance and life and accident plan benefits which they will receive.

2. Cases of special hardship will be taken up promptly with the local management which has full authority to act.

3. Until further notice, injured employees will receive workmen's compensation benefits plus a company contribution, to make their total compensation equal to their normal base wage.

4. Uninjured hourly employees, for whom work cannot be provided at present, will be paid through the payroll period ending April 27th. Thereafter, each individual case will be taken up by the local management.

William M. Rand, Monsanto President, announced that the plant will be rebuilt on the same site.

365 Machinery Orders Swamping Makers.

Backlogs of orders for automatic machinery have reached new records, according to contract manufacturing executives, and some are refusing to accept further orders. One of seven main advantages given for changing to new machines is the removal of undesirable working conditions and risks for machine operators through superior design. In the leather tanning industry, for instance, a new machine for soaking and milling hides will eliminate the odor of decaying flesh and hair, obnoxious to workers in the past, in addition to other improvements and savings. -- N.Y. Times (Mar. 10, 1947)

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366 Assistance to States for General Public Health Work.

This appropriation item is for assistance to the states in establishing and maintaining adequate public health services through grants, consultative services, demonstrations, and industrial hygiene investigations and training. Last year, Congress enacted the National Mental Health Act, and this appropriation item now provides \$3,000,000 for grants to the states to initiate this new program of developing community mental health services. The House approved an appropriation of \$15,682,500. The major portion of this appropriation (approximately \$15,000,000) is for grants-in-aid for general public health work, industrial hygiene and mental health. Three million dollars is specifically earmarked for mental health work. The amount allowed for all these purposes is \$1,406,000 less than the amount requested, but about \$2,716,000 above the previous year's appropriation for comparable items. -- Social Legisl. Inf. Service, Bull. (Mar. 31, 1947)

367 Health Plans in California.

News items from California depict three factors in health measures in that state: (1) Governor Warren's plan for a compulsory health insurance plan is meeting strong opposition, especially from Republican leaders; (2) under a voluntary disability compensation act which went into effect December 1, about 685 plans have been filed (January, 1947) and at least 25% of the eligible employees will be covered. Private insurance companies are writing supplementary plans. (3) The Health Service System of San Francisco operating since 1937 is proving unsatisfactory to the doctors, and is considered a financial failure. -- Pub. Health Economics (Feb., 1947)

368 Department of Industrial Medicine.

A department of industrial medicine and training course for medical graduates covering all phases of industrial medicine is to be established at Woodward General Hospital, Detroit. It is intended to train doctors for service with the medical divisions of both large and small industrial plants. More than \$400,000 has been collected toward building the \$2,500,000 hospital to be built at Thirteen Mile Road near Woodward Avenue. Wayne University is collaborating with the advisory board of Woodward General Hospital medical staff in setting up the department and training staff. -- J.A.M.A. (Mar. 15, 1947)

369 Could Your Plant Go Underground?

Your plant may have to go underground. When? Some industrialists favor yesterday and consider tomorrow too late. Publicly the Army has gone only as far as appointing a board to survey underground sites for "strategic defense" industries. But whether around-the-corner reality or beyond-the-clouds bugaboo, D (for Dig) Day brings these problems: (1) a place to go; and (2) living quarters, food, light and air. Suitable places are not as plentiful as in Europe. The best for large scale operations are probably the zinc and lead mines of Missouri. If a nearer location is desired it should be constructed. Details of the provisions for the process and the workers are hidden parking space, secret disposal of smoke, water storage, and power supply. However, maintenance costs are low, heating bills are negligible, landscaping costs are non-existent, and fire prevention is simple. A Swedish airplane-engine factory blasted

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out of solid rock and used during the war will be operated indefinitely. Some German constructions are described. Many industrialists do not favor any plans for underground plants. Others point out that when and if the necessity is visibly demonstrated it will be too late. — Modern Ind. (Mar., 1947)

370 Health Survey of Mine Fields Completed.

The Federal Coal Mines Administration released its Medical Survey Report of the Bituminous-Coal Industry on April 17, asserting that inferior health standards are not general in the coal industry, but that conditions in a few mining camps "are a disgrace to the country." "Provisions for health range from excellent, on a par with America's most progressive communities to very poor" the report declared. Five teams of naval officers of the Coal Mines Administration made the survey starting last summer, of health conditions in 250 mines in 22 major soft coal producing states. Rear Admiral Joel T. Boone headed the survey. Boone, in a foreword to the 300-page report said: "The present situation, which brought about the medical survey, would not have occurred had a sense of joint responsibility existed. Management has demonstrated in some instances a high degree of leadership in providing medical care. There is little evidence of corresponding labor leadership in health matters." The report concluded with recommendations for the improvement of housing, sanitation and public health, industrial medicine and hygiene, general medical services, hospitalization and recreation. — Pittsburgh Post-Gazette (Apr. 18, 1947)

371 National Science Foundation Act of 1947 (Senate Bill 526, amended).

The U.S. Senate now has before it the unanimous recommendation of its Committee on Labor and Public Welfare that it pass Senate Bill 526, as amended. In its report, the committee stated that the need for enacting this legislation is now "urgent" and that on the basis of extensive hearings and investigations it finds — "that federal support of scientific research, including provision for scholarships and fellowships for study in science, is essential to the preservation of the national health, prosperity, and security of the Nation and to the full development of our scientific resources." — Social Legisl. Inf. Service (Apr. 21, 1947)

372 Dr. Louis Schwartz Retires from U.S.P.H.S.

Dr. Louis Schwartz, Chief, Office of Dermatology, Industrial Hygiene Division, will retire from the U.S. Public Health Service on July 4, his 64th birthday. His period of active duty terminated March 1. For more than 41 years, Dr. Schwartz has been serving the public, first in immigration inspection and later in the field of industrial hygiene where he became one of the Nation's leading dermatologists. He was a pioneer in the study of industrial dermatosis, devised the patch test for the reaction of the skin to suspected materials, and is an authority on fungous infections. He discovered the desensitization that often takes place on continued exposure, and often prevented and shortened strikes due to dermatitis outbreaks by explaining this desensitization. — Ind. Hyg. News Letter (Mar., 1947)

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Occupational Disease Statistics

375 Occupational Disease Statistics.

	Calif. ³	Conn. ²	Ind. ²	Mich. ²	Ohio ¹	Wash. ⁴	Wis. ²	
	Jan.	Mar.	Mar.	Mar.	Jan.	Feb.	Feb.	
	1947	1947	1947	1947	1947	1947	1947	Totals
Asbestosis			1*					1
Carbon Monoxide	3					2	6	11
Carbon Tetrachloride							1	1
Chemical Poisoning (NOC)	39				12		3	54
Conjunctivitis	200					2	2	204
Dermatitis	552	42		53	555	43	114	1359
Hernia	1			6				7
Infections						1	4	5
Inflammatory Conditions	158			6		10		174
Lead Absorption			1					1
Lead Poisoning	6				10	1	2	19
Methyl Chloride							2	2
Miscellaneous		2			227	13		242
Nasal Septum Perforation						2		2
Noise	1							1
Pneumoconiosis		1		5	11			17
Pulmonary and Bronchial Affections	9					4		13
Silicosis		1	1	11	71	6**	2	92
Silico-tuberculosis						3**	1	4
Skin Diseases (other than dermatitis)			11		6			17
Tenosynovitis						10		10
Tuberculosis (due to contact)					13			13
Undulant Fever							1	1
Upper Respiratory Affections	8						4	12
Totals	977	46	14	81	905	97	142	2262

- (1) Occupational Disease Claims filed with the Industrial Commission.
There were 120,247 days lost, including 14 deaths from silicosis and two from pneumoconiosis.
- (2) Occupational Disease Cases filed with the Health Department.
- (3) Occupational Disease Cases filed with the Department of Industrial Relations and tabulated by the Department of Public Health.
- (4) Occupational Disease Claims filed with the State Department of Labor and Industries.

* The one case of asbestosis reported was fatal.

** This figure represents silicosis and silico-tuberculosis cases reported by the State Department of Health, Seattle City Health Department, and three deaths reported by Public Health Statistics Section, State Department of Health.

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- 374 Bureau of Industrial Hygiene, Department of Health, Commonwealth of Pennsylvania. Summary of Activities for the Calendar Year, 1946.
11 pp. mimeographed. (1947)

The general form and contents is about the same as the previous year's report (Abst. 1056, Oct., 1946). The number of plant inspections rose to 10,666, a higher figure than ever before, and apparently higher than that of any other state or organization. The number of employees in the plants inspected was 1,016,400. As usual, the great majority (91%) of inspections, were initiated by the Bureau itself. The hazards most frequently investigated included vapors, especially of petroleum hydrocarbons, welding fumes, dust (silica with the greatest number), and dermatitis. As before, the recommendations included ventilation, changed processes, personal protective measures, sanitation, medical service, and miscellaneous, with good housekeeping running highest.

Legal Developments

- 375 Five States Pass Occupational Disease Laws.

Five states have enacted occupational disease compensation laws at the 1947 legislative sessions. They are:

	Nevada
Tennessee	Texas
South Dakota	Iowa

Meanwhile, two states, Vermont and Montana, have appointed commissions to study similar laws and to report back to their representative legislatures.

(Memo to Members: The Foundation's Legal Committee is preparing analyses of the laws enacted. This will be mailed to Member Companies upon completion.)

J.F.M.

- 376 Report of the Special Commission to Study Need for Occupational Disease Law (Vermont).

In Vermont, one of the states which have no occupational disease law, a committee of five was appointed to study industrial conditions. Their report consists of: (1) an estimate of working conditions, based on brief surveys of several typical plants; (2) a summary of a study of occupational disease laws of other states; and (3) recommendations for the essentials of an occupational disease law. The principal facts established in the survey are: (1) no official reporting of occupational diseases has ever been required in the state; (2) most employers have tried to correct the hazards brought to their attention by the Department of Health, but a few have failed to cooperate; (3) the records show that there has been considerable silicosis in some sections; (4) conditions varied greatly in the different plants, and several hazards were discovered; (5) a number of employers were ready to install safety equipment but were hampered by lack of materials; and (6) there were cases where proper equipment was at hand but

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workmen did not cooperate by using it. In the second part, the general types of occupational laws are discussed. The recommendations include the appointment of a committee to make a fuller study of the laws, an appropriation for plant surveys, and early enactment of such measures as will give the State Board of Health the following duties and powers: (1) maintenance of a complete occupational disease reporting system; (2) power to establish and enforce reasonable control and preventive regulations; (3) authority and duty to engage in research for causes of occupational diseases; (4) maintenance of an adequate inspection service; (5) authority to approve proposed plans for control of appliances and equipment and to require the installation and maintenance thereof; and (6) power of entry to the premises of any industrial establishment. When the studies of occupational diseases in the state and of existing legislation are completed the way will be paved for an adequate occupational disease law.

377 Thirteenth National Conference on Labor Legislation. Report of the Committee on Safety and Health and Workmen's Compensation.

The estimated annual cost of accidents is 3-1/2 billion dollars, and frequency rates have been increasing since VJ-Day. Suggested remedies include increased personnel and appropriations for State labor departments, uniform safety codes for industries not already covered, code-making authority for more states, and improvement of industrial hygiene and sanitation services. After 30 years of workmen's compensation, 50% of the workers are still unprotected. The Conference proposed broader coverage, higher maximum benefits, lifetime payments for permanent disability, payment of death benefits to dependents, other increased benefits, and correlation of the functions of workmen's compensation and rehabilitation agencies. — Monthly Labor Rev., 64, 269 (Feb., 1947)

378 Death Benefits—Fall Aggravating Bright's Disease—Medical Testimony.

Medical testimony was conclusive to show that the decedent's death from Bright's Disease was hastened due to an acceleration of the disease by a fall in the course of employment; the claimant, son of the decedent, was entitled to the full award under the statute. — Holly v. Spartan Grain and Mill Co. South Carolina Supreme Court. No. 15,921. March 3, 1947. (CCH)

379 Tuberculosis Contracted by Student Nurse in State Hospital—Liability of State as "Employer."

A student nurse who worked in a state-owned hospital as a part of her course at the University of Wisconsin, was not eligible to collect compensation from the State of Wisconsin as an "employee," inasmuch as the Civil Service Rules governing the employment of state personnel had not been complied with. — State of Wisconsin v. Industrial Commission. Wisconsin Supreme Court. No. 52. February 25, 1947. (CCH)

380 Inhalation of Gas Fumes—Rejection of Evidence—Prejudicial Error.

The trial court committed prejudicial error in rejecting evidence as to the decedent's condition, inasmuch as the inhalation of gas fumes and subsequent effect can be determined largely by symptoms and condition of the victim; the cause was remanded for consideration of the evidence. Stough v. Industrial Commission. Ohio Court of Appeals, Franklin County, No. 3925. December 4, 1946. (CCH)

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381 Review of Total Disability Award for Industrial Blindness—Allowance of Travel Expenses.

The plaintiff was found to be completely blind and still eligible for compensation, even though he had accepted a temporary wartime job; plaintiff was not entitled to an award under the statute to cover expenses incurred regarding the hearings. — Maryland Casualty Co. v. Industrial Commission of Colorado. Colorado Supreme Court. No. 15,784. March 3, 1947. (CCH)

382 Leg Amputation—Pre-existing Diabetes and Arteriosclerosis—Medical Testimony.

A leg amputation resulting from an ulcerous or gangrenous condition on the toes, allegedly the result of an accident in the course of claimant's employment, was not compensable since the medical testimony conclusively showed that a pre-existing diabetes and arteriosclerosis, suffered by claimant, would produce an ulcerous condition without injury of any kind. — Mayer v. Herman Dohrman Co., Inc. St. Louis Court of Appeals. No. 27,101. February 18, 1947. (CCH)

383 Latent Disability—Final Receipt Executed Under Mistake of Fact.

The record clearly showed that claimant's deceased's latent heart condition was a result of the burns sustained in the course of employment, and the final receipt was set aside because the agreement which it terminated did not cover all of the deceased's injuries nor did the deceased know the full extent thereof at the time he executed the final receipt. — Harrison v. Alden Park Manor Apartments. Pennsylvania Superior Court. No. 121. March 11, 1947. (CCH)

384 Accident Activating Dormant Disease—Time to File Claim.

Medical evidence was sufficient to indicate that a blow on the head suffered in the course of employment was the agent which activated the decedent's pulmonary tuberculosis, causing death; the claim was not barred by the one-year statute of limitations, inasmuch as the statute requires that a claim be filed within a year after the advent of disability, not one year after the accident itself. — Dryden v. Omaha Steel Works. Nebraska Supreme Court. No. 32,201. February 21, 1947. (CCH)

385 Hernia—Causal Connection Between Operation and Coronary Thrombosis.

The decedent's death from coronary thrombosis in the hospital some days after an operation to correct a hernia condition allegedly caused by an accident in the course of employment, was not causally related to the hernia operation, but was due to natural causes, a developing disease condition independent of the hernia. — Aetna Casualty and Surety Co. v. Industrial Commission of Colorado. Colorado Supreme Court. No. 15,757. March 17, 1947. (CCH)

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386 Safe Place to Work—Oil Tank Explosion.

The widow of a subcontractor's employee who, while engaged in welding on an oil tank for the defendant company, met his death when the tank on which he was working exploded, was unable to recover against the contractor since it was the responsibility of the defendant company to provide a safe place to work. — Michelson v. Cities Service Oil Co. Wisconsin Supreme Court. No. 80. Feb. 25, 1947. (CCH)

Book Reviews and Notices

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- 387 Human Factors in Air Transport Design. R.A. McFarland. McGraw Hill Book Co., New York. 670 pp. Price \$6.00. (1946)

This volume is of general interest to industry not so much for the information presented in respect to aircraft design, but rather, because it illustrates a system of approach to the problems of design of mechanical equipment which takes into consideration human factors as well as mechanical requirements. This book reflects the author's attempt to meet the aeronautical engineer's challenge for more specific information as to limits within which physical variables should be controlled to meet human requirements. To gain this objective it was necessary to bridge the gap between the highly specialized knowledge of the engineer, on the one hand, and of the physiologist and other specialists in biological fields, on the other. To illustrate, the author calls attention to the delay in pressurizing airplane cabins to offset the effect of altitude upon the human organism compared with progress in supercharging engines for the same reason. The physiologist predicted the need for one just as quickly as the engineer did the other, but because they were not working together, the human requirements were not met as quickly. The subjects covered in the separate chapters serve to indicate the nature of the problems encountered in airplane design: High-altitude, ventilation, temperature and humidity, control of insects, carbon monoxide, noise, vibration, acceleration, motion and flight performance, passenger accommodations, prevention of accidents. This volume demonstrates in a striking manner, how much can be accomplished in bringing the human factor to the attention of the designing engineer, and more importantly, what a wealth of information is available from physiology and other biological fields in a form that lends itself to direct engineering use. When this is more generally recognized, engineers will demand the same sort of systematic treatment of the human factors for use in the design of other type of mechanical equipment.

- 388 The Guarantee of Work and Wages. J.L. Snider. Division of Research, Graduate School of Business Administration, Harvard University, Boston. 191 pp. Price \$2.75. (1947)

Part I of the book deals with the experience of industry with guarantee plans. The conclusion is drawn that no one plan that has been or could be drawn up could be applied successfully throughout all American industry, but that plans which have been soundly formulated have proved beneficial to the company and workers. Part II suggests some next steps with principal emphasis on management's and labor's approach to the program, and includes a discussion of the means of attaining stability. Part III looks ahead to the long-range goal and the means of attaining it, and shows that a part of the responsibility must rest upon government and the public.

- 389 Health Insurance in the United States. N. Sinai, O.W. Anderson and M.L. Dollar. The Commonwealth Fund, New York. 131 pp. Price \$1.50. (1946)

This book is one of a series sponsored by the Committee on Medicine and the Changing Order of the New York Academy of Medicine. The authors discuss the voluntary group health prepayment plans in this country,

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tracing the various phases of their growth. Current problems of organization and administration are analyzed, and the significant evolutionary trends are pointed out. One chapter gives the history of the attitudes of various groups toward the plan, including the American Medical Association, American Hospital Association, American Public Health Association, U.S. Public Health Service and others. In conclusion the authors say that the key to future progress lies in the degree of support given by the public, as well as by leaders of government and industry.

- 390 Industry, Tuberculosis, Silicosis and Compensation. A Symposium, Prepared by Committee on Tuberculosis in Industry of the National Tuberculosis Association and American Trudeau Society. National Tuberculosis Assoc., New York. 126 pp. (1945)

The purpose of this volume is to cover the field of the former Saranac Symposium on Tuberculosis in Industry, which has not been held for four years due to the war. There are 12 papers, including four on tuberculosis in industry, five on the pneumoconioses, and three on compensation. Each is written by a well-known expert in the field. The papers on Review of Silicosis by L.E. Hamlin, Respiratory Hazards on Arc Welding by O.A. Sander, and Management of the Silicotic Patient by P.J. Bamberger are accompanied by a number of roentgenograms. Diagnosis and Prognosis in Pneumoconiosis is discussed by the late Dr. Gardner, and a brief paper on Aluminum Therapy by A.J. Lanza completes the discussion of silicosis.

Industrial Medical Practice

- 391 A Study of the Hazards of Exposure to Metallic Fumes and Dust in Brass Foundries. W.W. Stalker. J. Ind. Hyg. & Tox., 29, 96-112 (Mar., 1947)

Two series of lead and zinc fume samples were collected from four different brass foundries ranging in population from three to 741 employees and in brass melted per day from 500 to 135,000 pounds. The first series of samples showed high average atmospheric lead concentrations in only one of the four foundries, 8 mg./10 cu. meters during melting and 2.28 mg./10 cu. meters during pouring, while the second series of samples showed no atmospheric lead or zinc concentrations even approaching threshold. Observations were made on the lead absorption of 98 foundrymen working in five different brass foundries. These observations included stippled cell counts on all 98 men and lead analyses on 94 urine and 24 whole blood samples. Of the men tested by each method the percentage showing excessive lead absorption was 11.2 as judged by stipple cell counts, 34 by urine analysis, and 79 by blood analysis. The mean urinary lead was 0.144 mg./l. and the mean blood lead was .12 mg./100 cc. The findings and discussion presented warrant the conclusion that urine and blood analyses yield better evidence of total lead exposure and absorption in the brass foundry than do either examination of blood for stippled erythrocytes, which are unreliable, or periodic atmospheric analyses per se. Physical examinations were made on 75 brass foundrymen including only 25 of the group that showed high urinary lead concentrations. Symptoms and clinical histories

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suggested that a mild alimentary type of lead intoxication might exist in many brass foundrymen. The control problem in brass foundries was approached by suggesting a two phase control program. One phase (Process Control) included general ventilation and production engineering methods of fume control. Another phase (General Hygienic Program) included a comprehensive medical and sanitation program such as outlined by the A.P.H.A. Committee on Lead Poisoning which requires the cooperation of foundry management, workmen, and industrial hygienist. — Author's summary.

392- Danger of Use of Cadmium Lined Containers for Foods and Drinks.

R. Monnet and F. Sabon. Press. Med., 54, 677 (Oct. 19, 1946)

Monnet and Sabon report that 300 persons developed food poisoning after eating in a worker's canteen. The poisoning was caused by wine which had been kept for several hours in cadmium lined containers. The wine was found to contain from 100 to 180 mg. of cadmium per liter. After citing reports on many similar cases of poisoning caused by drinks or foods that had been kept in cadmium lined containers, the authors point out that from 15 to 90 minutes after ingestion of such drinks or foods there appear signs of gastrointestinal intoxication with dryness of the mouth and throat, nausea, epigastric pains, gastric cramps, vomiting and severe diarrhea. The patients usually recover in less than a day or two, because the decided emetic effect of cadmium causes rapid elimination. It should be called to the attention of industrialists, hygienists and physicians that cadmium lined containers should not be used in the handling of foods and drinks. — J.A.M.A.

393 Thresher's Disease. W. Hoffmann. Schweiz. med. Wchnschr., 76, 988-989 (Sept. 28, 1946) — (German)

Hoffmann describes a disorder which developed in persons who had inhaled dust while working at threshing machines. The threshing had been done in rather confined sheds, and the grain in question had been harvested while damp and had become gray. The patients had fever for from one to five days, cough, severe sweating, headaches, a feeling of extreme weakness and unsteadiness when attempting to stand or walk. The examination of barley that had caused several cases of thresher's disease revealed a fungus that has been known to produce a condition characterized by a dizzy-swaying. It is assumed that thresher's disease is likewise caused by fungi. Threshing in the open air or devices for the suctioning off of dust might help to prevent attacks of thresher's disease. — J.A.M.A.

394 Pyridoxine in Treatment of Radiation Sickness. L.M. Shorvon. British J. Radiol., 19, 369 (Sept., 1946)

According to Shorvon pyridoxine is a member of the vitamin B group occurring principally in liver and yeast. It can be obtained in tablets for oral use and in ampules for intravenous medication. The author employs the tablets, giving five 10 mg. tablets daily. Occasionally he gives intravenous injections of two ampules (each containing 50 mg.) a week. In addition to its value in the treatment of radiation sickness, it increases the leukocyte count. This is of importance because of the tendency for x-rays to depress the white cell count. The author used pyridoxine in the treatment of 24 cases of radiation sickness. Good results were obtained in 22 of these. — J.A.M.A.

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- 595 Lesions of Central Nervous System Produced by Carbon Monoxide Poisoning. J. Lhermitte and De Ajuriaguerra. *Semaine des Hop. de Paris.*, 22, 1945-1947 (Nov. 14, 1946)

According to Lhermitte and Ajuriaguerra the changes in the brain in carbon monoxide poisoning differ widely, depending on the time elapsed between the exposure and necropsy. Hemorrhages, necrobiosis, necrosis and edema characterize the anatomic picture in cases in which death occurred rapidly. These changes may involve primarily the lenticular nuclei but also the subcortical white matter, the hippocampus, the substantia nigra and the cerebellum. Changes in the vascular network with infiltration of the walls by neutral lipids and by a peculiar substance containing ferric salts, calcium and lipids may be observed in cases in which the poisoning continues for a prolonged period or in which death is delayed. A diffuse demyelination of the entire white matter of the brain similar to Schilder's diffuse cerebral sclerosis may be observed in cases in which death occurs after a long period of remission. It is suggested that in carbon monoxide poisoning a toxic factor in addition to the anoxic factor affects the neuroglia and the vascular network, with specific involvement of the basilar region and the white fibers of the centrum ovale. -- J.A.M.A.

- 396 Three Cases of Chronic Trichloroethylene Intoxication. E. Antonioli and A. Rigola. *Med. lavoro.*, 37, 119-124 (1946) (Italian)

Three cases are described. In two of these the symptoms were those of arthralgia, myalgia and neuralgia. The third case showed abdominal crises suggesting a gastric carcinoma. Recovery followed removal from the drug. -- C.A.

- 397 A Case of a Syndrome of the Nervous System Produced by Carbon Disulfide. F. Delor. *Med. lavoro.*, 37, 147-151 (1946) (Italian)

A case is described of polyneuritis, confusional psychosis, and serous meningitis produced by carbon disulfide. -- C.A.

- 398 Tetra-ethyl-lead intoxication. A. Bruusgaard. *Nordisk Med.*, 32, 2644-2656 (1946) (Norwegian)

A survey is given of tetra-ethyl-lead intoxication, history, symptoms, diagnosis and treatment. During cleaning of railway-tanks for gasoline, which had been used for ethyl-gasoline transport, three workers fell ill, two were hospitalized, one of these died. The main symptoms were: insomnia, unrest, weakness, irritation of skin and mucous membranes. The rules for handling ethyl-fluid and ethylgasoline are mentioned. -- Author's summary.

- 399 Duodenal Ulcer Following Exposure to Carbon Tetrachloride. Report of Two Cases. Adelaide R. Smith. *J. Ind. Hyg. & Tox.*, 29, 134-135 (Mar., 1947)

In the two cases of carbon tetrachloride poisoning reported, duodenal ulcer following exposure to toxic concentrations constituted the outstanding pathology, with no apparent serious liver or kidney involvement. A study of the literature reveals that a similar effect has been produced in animals.

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- 400 Your Work Load Under a Compulsory Sickness Insurance System. Elizabeth W. Wilson. Med. Economics, 24, 129 (Dec., 1946)

The author gives statistics and makes calculations that under a compulsory insurance plan the average physician would have to handle 21.3 visits a day, which is more than most physicians can endure regularly. -- From Pub. Health Economics

401. Clinical Use of Streptomycin in Tuberculosis. K.H. Pfuetze and others. Diseases of Chest, 12, 515-520 (Nov.-Dec., 1946)

This report by Pfuetze and his associates is concerned with 50 cases of pulmonary tuberculosis in which streptomycin was administered for from two to six months. With few exceptions the patients had tuberculosis that was progressive or did not respond to rest in bed. The daily dose varied from 1 to 4 Gm. It was divided into doses which were given every three to six hours by intramuscular or deep subcutaneous injection. It was found that streptomycin resembles other modern antibacterial agents in suppressing the multiplication of sensitive organisms without complete eradication of the infection. As a result there is a tendency for the disease to recur following cessation of streptomycin treatment. The authors believe that streptomycin may help in conjunction with other forms of treatment but that it should not be regarded as a substitute for well established forms of treatment. -- J.A.M.A.

- 402 Streptomycin and Diasone in the Treatment of Experimental Tuberculosis of Guinea Pigs. F.T. Callomon, J.A. Kolmer, Anna M. Rule and A.J. Paul. Proc. Soc. Exptl. Biol. Med., 63, 237-240 (1946)

Streptomycin and diasone are therapeutically effective in the treatment of guinea pigs recently infected with virulent tubercle bacilli. The two compounds together are more effective than either alone. -- C.A.

- 403 Streptomycin in Pulmonary Tuberculosis in Childhood. Results in Four Children. H.N. Sanford and D.E. O'Brien. J.A.M.A., 133, 691-693 (Mar. 8, 1947)

Treatment of four children seven months to three years of age with pulmonary tuberculosis by the administration of 1,000,000 units of streptomycin a day for one month resulted in defervescence in all four, improvement in their general condition and a regression of the appearance of the pulmonary lesions in the roentgenograms. -- Authors' conclusion.

"We should bear in mind that good medical service has been and can be responsible for approximately one-third of the reduction in injury rates." -- From "Medical Service in Industry and Workmen's Compensation Laws" by American College of Surgeons.

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- 404 New Methods in the Treatment of Tuberculosis. C.H. Gellenthien.
Ind. Med., 16, 117-122 (Mar., 1947)

The next few years will show the value of B.C.G. vaccination in creating immunity and whether it is desirable to initiate a primary infection in everyone. It would not seem desirable according to our present knowledge. Streptomycin has antibacterial properties against the tubercle bacilli in vitro and vivo. The two most important limiting factors are its toxicity and the ability of the tubercle bacillus to develop a resistance to the antibacterial effects of streptomycin. Chemotherapy apparently will have very definite limitations in the treatment of any chronic infection with the pathological and clinical peculiarities that tuberculosis has. There is as yet no "specific" treatment for tuberculosis, neither chemotherapeutic nor biological. There are more than 53 individual factors in our present armamentarium. They are of varying importance, and all exert a beneficial effect when properly used. The treatment of pulmonary tuberculosis is not, however, mainly the treatment of cavities; it is the management of a human individual. Rest remains the very foundation of all treatment of active pulmonary tuberculosis. Other medical and surgical methods are accessory to and not a substitute for rest. The aim of our modern treatment is not only to stop the progress of the lesion and restore the patient's capacity to live and work but also to prevent him from infecting others. -- Author's conclusion.

- 405 Silicosis and Hematogenous Tuberculosis. R. Zollinger.
Schweiz. Ztschr. f. Tuberk., 3, 205 ff. (1946)

Pathologic anatomic studies on eight patients revealed to Zollinger that the association of silicosis with tuberculosis produces the anatomic conditions for increased passage of tubercle bacilli into the blood. The small pulmonary arteries and veins undergo some destructive inflammation and are thus deprived of their elastic tissue, an important defensive element against the tuberculous invasion. Silicosis produces many more contacts between tuberculous foci and the vessels than tuberculosis alone. In this way the tendency to hematogenous spread in the combination of tuberculosis and silicosis is explained. Furthermore, the destruction of lymph nodes by silicotic granulation tissue transfers tubercle bacilli into the blood directly as well as through the thoracic duct. The vascular damage due to silicosis plays a predominant part in the hematogenous dissemination. -- J.A.M.A.

- 406 Functional Repercussion in Silicosis. J.G. Cosio.
Rev. clin. espan., 21, 467 (June 30, 1946) (Spanish)

The stages of silicosis and their corresponding degrees of functional disability are described.

- 407 Coexistent Pulmonary Asbestosis and Sarcoidosis. J.H. Skavlem and R.J. Ritterhoff. Am. J. Path., 22, 493-517 (May, 1946)

This is a necropsy report of a 42-year old man who died a respiratory death after 11 months of increasing severe exertional dyspnea. Previously the patient had worked for 25 years in an asbestos plant. The pathological study revealed a coexistent asbestosis and sarcoidosis of both lungs. -- J.I.H.&T.

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- 408 A Case of Silicosis. E. Donzelet, A. Meyer, Calmich and Chartrain. Presse med., 54, 148 (1946)

The authors report a case of a man with mitral stenosis who, after two hundred and eighty hours of work in quartz dust, showed serious silicosis clinically and roentgenologically. The congestion of the lungs apparently caused a susceptibility. — Occ. Med.

Editor's Note: See Gardner (Proceedings, 10th Annual Meeting, Industrial Hygiene Foundation, pg. 10). Mitral stenosis is known to produce x-ray findings which closely resemble those of silicosis.

- 409 Histology of Asbestosis. L. Noro. Acta Pathol. & Microbiol. Scandinav., 23, 53-59 (1946) (Danish)

Two workers in an asbestos factory died under circumstances which indicated that the cause of death was their trade. When the workers of this factory were examined roentgenologically asbestosis was found in 65 per cent of the 167 workers examined. The microscopic picture of asbestosis is characterized by a reaction caused by the needles in the tissue, which becomes manifest in exudate cell infiltration, accompanied by numerous giant cells containing foreign particles and an increase of interstitial connective tissue and fibrosis. Noro is inclined to think that in the pathogenesis of asbestosis the mechanical factors are the most important, although the chemical factors may have some significance in a later phase. — J.A.M.A.

- 410 Pulmonary Suck and Blow as a Respiratory Analgetic. J. Reicher. Arch. Surgery, 53, 77-85 (July, 1946)

(1) While Coryllos and Thompson and Birnbaum have demonstrated the importance of combining cardiac massage with pulmonary ventilation in resuscitation, my experiments indicate that such a combination would frequently be inadequate if the pulmonary measures consisted in either pressure or suction used alone. The clinical implications are that suck and blow is the ventilation of choice when combined with cardiac massage.

(2) In the appropriate circumstances, both cardiac and respiratory stimulation should be used in asphyxia. Either alone is often ineffective. (3) Unlike pressure, suction exerts a stimulatory effect on respiration as indicated by the inspiratory gasp caused by a suction stroke. No such effect is noted with manual artificial respiration. — Author's summary.

- 411 Advising the Suspect Case. Editorial. H.E. Hilleboe. Pub. Health Repts., 62, 325-326 (Mar. 7, 1947)

The tuberculosis suspect needs to be advised about his condition and guided toward sound health habits over a prolonged period. Crowded conditions have favored treatment of the clinical and subclinical cases with neglect of the suspect, but he should not be forgotten. With the information that he may have early tuberculosis, he should also know that there is no real cause for alarm. The "teachable moment" should be found at which re-education should begin, and the suspect should be encouraged to return to the clinic or physician for advice.

- 412 South Carolina Tuberculosis Control Program in Industry. Minnie Fink. Ind. Nursing, 6, 20-23 (Feb., 1947)

The over-all program of the Tuberculosis Control Division has four major considerations: case finding; medical care and isolation; after

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care and rehabilitation; and protection of the tuberculosis family against economic distress. The author discusses each of these factors with statements on the progress of the South Carolina survey in each respect, and the need for additional work.

- 413 A Study of Pneumonia in Shipyard Workers. M.F. Collen.
J. Ind. Hyg. & Tox., 29, 113-122 (Mar., 1947)

An epidemiological study of 2,794 consecutive pneumonia cases in an average of 66,000 shipyard workers from September, 1942, to May, 1945 revealed that: (1) the annual incidence rate of pneumococcic pneumonia was 12.4 per 1000 workers, with the usual range of ratios between specific types; (2) the average case fatality rate was 5.8%, or 72 per 100,000 workers. The mortality rate fell to 1.1% for the last year; (3) a significantly higher incidence, without a higher fatality rate, occurred in workers employed under one year; (4) no significant difference was found between the incidence rates in male and female workers, but as usual, the death rate for males was higher; (5) the increasing incidence and death rates with advancing age were corroborated; (6) no significant differences were found between the annual incidence and death rates from pneumonia for the various shipyard occupational groups studied, including welders. No difference between pneumonia in welders and in other workers was found.

—From Author's summary.

- 414 Industrial First Aid in Chemical Injuries of the Eye. A. Gibson and J.M. Carlisle. Sight-Saving Rev., 15, 220-228 (Winter, 1945)

Immediately after a chemical injury, the patient's eye should be flushed with water at the plant Medical Department. The contents of the conjunctival sac is then tested for its reaction with indicator paper. A local anesthetic is applied to the eyeball, the lids and conjunctiva are thoroughly cleansed, the cornea is stained with fluorescein, so that these tissues may be examined for abrasions, foreign bodies, lacerations, and chemical burns. Treatment for burns consists of cold compresses, local anesthetics, liberal quantities of penicillin ointment, eye pads, and atropine when needed. For alkali burns, the irrigation should be continued until the secretion remains neutral in reaction. Adhesions should be looked for twice daily. — Am. J. Ophth.

- 415 Chemical Burns of the Human Cornea. R.S. McLaughlin.
Am. J. Ophth., 29, 1355-1362 (Nov., 1946)

From the study of 500 consecutive cases, the following conclusions are drawn: (1) Immediate first aid, followed by long flushing with water is of the utmost importance. No attempt at neutralization is recommended. (2) Specialized treatment by an ophthalmologist should be given within two hours after the injury. Further delay threatens recovery of full vision. (3) Denudation is the treatment of choice. (4) It is noted that the majority of cases, 456, or 91.2 per cent, healed in 48 hours with no loss of vision; 37, or 7.4 per cent healed slowly, but without loss of vision; seven cases, or 1.4 per cent healed with a residual loss of vision. The loss of vision in all seven cases was the result of inadequate preliminary care or health conditions present before the eyes were burned. (5) There is no mention made of conjunctival adhesions in this discussion, and it is notable that with the technique described the author had no such complication in any of these 500 consecutive cases. — Author's summary.

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- 416 Early Transplantation of Mucous Membrane from the Mouth and Conjunctiva in Burns of the Eye. Z. Pavlic. *Ophthalmological*, 108, 297-304 (Dec., 1944)

The author advocates early transplantation of mucous membrane in severe cases of cauterization and burns of the conjunctiva and cornea. When both eyes are affected he uses mucous membrane from the mouth. When only one eye is damaged, conjunctival tissue from the upper fornix of the undamaged eye can be used if the burn is not too extensive. In several patients early transplantation only prevented a more marked symblepharon and did not prevent corneal leucoma, but in several others normal vision was preserved. The latter was especially true after acid burns. — *Am. J. Ophth.*

- 417 Influenza Vaccine and Mass Immunization. J.J. Sievers. *What's New in Ind. Hyg. (Ill.)*, 3, 4,5 (July-Sept., 1946)

The mass immunization practiced in the Army in September, 1945 showed 2.2% of clinical influenza for the vaccinated group and 7.1% for the control group. No effect on common colds has been discovered. The vaccine occasionally causes local and systemic reactions, and care should be observed especially with patients allergic to egg or chicken protein. Considering the absences due to influenza and the success achieved with the vaccine, a vaccination program by industries seems desirable.

- 418 Effect of Vaccination on Incidence of Influenza B. G.K. Hirst, A. Vilches, O. Rogers and C.L. Robbins. *Am. J. Hyg.*, 45, 96 (Jan., 1947)

Hirst and his colleagues have studied the value of influenza vaccination in an epidemic of influenza B. They compared a group of 550 men attending Yale University as part of their Army Special Training Program who had received mixed A and B influenza vaccine with a group of 1,050 unvaccinated naval students studying at the same institution under similar circumstances. In the early part of November, 1945 an epidemic of influenza caused almost entirely by the B virus developed. The number of cases reached a peak in about four weeks and was rapidly subsiding by the middle of December. Three cases of influenza appeared in the vaccinated group and 152 cases in the unvaccinated group, giving attack rates of 0.5 and 12.5 per cent respectively.—The investigators believe it highly probable that the difference in attack rate could be attributed to the vaccination of the army group with influenza virus treated with formaldehyde. This report presents additional evidence of the value of vaccination against influenza and suggests that it may be more effective against influenza B than against influenza A. — *J.A.M.A.*

- 419 BCG Vaccination in Hospitals and Sanatoria of Saskatchewan. R.G. Ferguson. *Am. Rev. Tuberc.*, 54, 325-339 (Oct.-Nov., 1946)

The rate of infection among nurses negative to tuberculin on entrance to a General Hospital was approximately 12% per annum. In Sanatoria employees in Saskatchewan the rate was 60% per annum. The rates among those vaccinated with BCG were 1/4 and 1/5 of those figures respectively. Thus, BCG is not 100% effective, although its protection is very considerable. When tuberculosis developed in the vaccinated persons, the lesions were less extensive than in the unvaccinated groups.

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- 420 Rare Case of Laryngeal Burn Due to Inhalation of Vapor from Boiling Water. G. Novella. Minerva chir., 1, 222 (Sept., 1946)

A burn of the larynx due to inhalation of steam from boiling water is a rare industrial accident. The subject of this report was a worker in a salt mine who sucked on an obstructed outlet of the tube through which superheated salt water was conducted to the evaporation tubs. The burn rapidly produced edema of the glottis and pharynx, dysphagia, painful respiration, acute trismus and pseudo-membranous lesions of the diphtheritic type. The treatment consisted of tracheotomy followed by proper treatment of the burn. — Occ. Med.

- 421 The Hemogenic Syndrome of Welders: Acute Hemorrhagic Purpura, Relapsing and Curable. P. Harvier, R. Deul, H. Griffen and P. Lebreton. Paris med., 36, 101 (1946) (French)

A welder, 35 years of age, with eight years' experience, had to weld copper tubes inside a tank for 45 minutes with an oxyacetylene torch. He wore a badly fitting mask without pressure. When he came out of the tank he complained of headache, vertigo and sweating. He stayed in bed for two days, with pains in the back and vomiting. On the third day he had bleeding of the gingiva. On October 24 he came to the hospital with bleeding gingiva, small ecchymoses in the oral cavity, petechiae over the whole body, serious hematuria, bloody stools, a red blood cell count of 5,000,000 and a white blood cell count of 11,800. The reaction to the tourniquet test was positive. The patient showed slight improvement but had relapses on November 11 and 28. His recovery was slow. This is a hemorrhagic purpura of toxic origin but without any anemia. L. Pierquin, R. Herber and E. Zappel described the following hemopathies of welders: polyglobulism anemia, fatal aplastic anemia and leukemia. The authors tried to find the cause by experiments, because direct investigation of the work place was not possible. They got no results. — Occ. Med.

- 422 Disturbance of Pigmentation in Fluorosis. L. Spira. Acta Med. Scand., 126, 65-84 (1946)

Changes due to chronic ingestion of small amounts of fluorine are produced through the vegetative nervous system. The hypoparathyroidism with reduction of calcium content is also attributed to gland involvement through its autonomic nerve supply. Another chronic symptom is melanoderma, which suggests that the chromaffin system may be principally implicated in the changes associated with chronic fluorosis. An examination of nearly 5000 apparently healthy young people revealed the existence of brown patches with ectodermal dystrophies in about 10% (10.5 in males, 9% in females). Melanoderma, especially in conjunction with hypoparathyroidism, should be regarded as a sign of fluorosis. Apart from hypoparathyroidism, mild degrees of Addison's and Recklinghausen's disease are encountered in chronic fluorine poisoning (fluorosis); this is also due to the action on the adrenals. Fluorosis, furthermore, is very similar clinically to the picture produced by arsenic poisoning. In both instances the effect on the vegetative nervous system is primary, the involvement of the endocrine system being a secondary effect. — C.A.

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- 423 Preliminary Reports on the Effect on Dental Caries of the Use of Sodium Fluoride in a Prophylactic Cleaning Mixture and in a Mouthwash. B.G. Bibby, H.A. Zander, Mary McKelleget and Bertha Labunsky. J. Dental Res., 25, 207-211 (1946)

A 1% sodium fluoride-pumice-hydrogen peroxide mixture was applied in three dental prophylaxes to the teeth on one side of the mouths of 47 children in an orphanage, and a mixture without the sodium fluoride applied on the other side. Mirror and explorer mouth examinations for caries were made. Re-examinations were made after one year, and 43% less new caries was found on the fluoride treated sides than on the others. A similar study on 95 children in another orphanage showed a 25% reduction in caries on the fluoride treated side. A group of 31 dental students used a 0.1% fluoride mouth-wash (pH 4.0) three times weekly for a year and 15 other students used a similar dentifrice without fluoride. Dental examinations including bite-wing x-rays showed no decrease in new caries in the fluoride group as compared with the controls. — B.A.

Industrial Health Hazards and Their Effects

- 424 Silicosis as It Affects the Bricklayer. L.M. Merritt. O.I.C. Monitor, 20, 23 (Feb., 1947)

Since silicosis became compensable in Ohio in 1937, 42 claims or 4% of the total allowed for silicosis, have been awarded to bricklayers. These bricklayers are specialists who reconstruct furnaces in steel mills and glass plants. Silica brick, which is over 90% free silica, is one of the types used, and the free silica content of the other types increases with use. Most of the work is done inside the furnaces, so proper exhaust ventilation is necessary. Constant check should be made to determine air flow in all parts of the space. The air change rate should be higher when old bricks are being torn out. If mechanical cutting is provided, thorough exhaust ventilation is necessary, especially with dry cutting. Wet saws reduce the hazard but do not entirely eliminate it as the mist thrown off will carry fine particles which will dry later. Wet saws should be located either outside the furnace structure or in the direct path of the exhaust.

- 425 Pneumoconiosis in South Wales Anthracite Miners. C.G. Gooding. Lancet, 2, 891-896 (Dec. 21, 1946)

This report by Gooding is based partly on clinical experience provided by examination of many hundreds of anthracite miners during the last 20 years and partly on the necropsy findings in 592 deaths among patients with silicosis. Associated tuberculosis was present in nearly a fourth of 592 certified miners who died and in 28 per cent of 516 silicotic deaths. Tuberculosis which accompanies pneumoconiosis often lacks its usual features, and it is probable that more detailed investigation would reveal tuberculosis in a much greater proportion of silicotic miners. Emphysema was another common accompaniment of advanced silicosis, and it is responsible for much of the disablement in these men. About half of the silicotic deaths were due to cardiac failure and half to infection, chiefly tuberculosis. Signs of embarrassment of the right side of the

heart were often found in the men with more advanced pulmonary lesions. This series of cases offers no evidence that there is an increased incidence of primary lung cancer in pneumoconiotic anthracite miners. Men with clinically recognizable tuberculosis have a particularly poor prognosis, but many of those certified in the early stage survive for many years. -- J.A.M.A.

- 426 Miner's Nystagmus in the Mines of Sardinia. C. Scaglione.
Rassegna Ital. d'Ottol., 15, 20 (1946)

In an examination of 30,000 miners in Sardinia the author could not find a single case of miner's nystagmus. He attributes this fact to the conditions under which the laborers work, that is in the erect position, in excellent illumination and good ventilation, and without explosives. All of these factors lessen the psychopathic tendencies which tend to produce miner's nystagmus. -- Am. J. Ophth.

- 427 Fluorine Hazards, with Special Reference to Some Social Consequences of Industrial Processes. Margaret M. Murray and D.C. Wilson.
Lancet, 2, 821-824 (Dec. 7, 1946)

Murray and Wilson point out that an outbreak of fluorosis in cattle has drawn attention to the large amount of fluorine and fluorine compounds being set free by some industrial processes. Naturally occurring or endemic fluorosis attributable to water supplies, and "man-made" fluorosis due to industrial processes should be separately considered, though some of their effects may be the same. Fluorine should be extracted from fumes before allowing them to pass into the atmosphere. In an example mentioned the substitution of closed kilns in the burning of ironstone would make the amount of fluorine present in the ore and coal immaterial from the public health point of view, but methods for such fluorine control are at present too rarely applied, because fluorine hazards are not sufficiently appreciated. -- J.A.M.A.

- 428 Does a "Disease of Welders" Exist? A. Fell.
Presse Med., 43, 598 ff. (1946) (French)

In spite of the many writings by distinguished but not practically experienced scientists the author doubts that such a thing as "welders' disease" exists. Diseases of the eyes, ranging in seriousness up to keratoconjunctivitis, are caused by ultraviolet and infra-red rays. Only 10 per cent escape slight injury, a slight weakness of vision, especially in the evening after work. The lungs show a little more fibrosis than usual, perhaps the beginning of a sclerosis caused by iron oxide. The dust contains 51 per cent iron oxide and only 1.5 per cent silica. Autopsies showed that the nodules visible roentgenologically correspond to the inhaled iron oxide and that they are not silicotic nodules. Disturbances of the nervous system are no more frequent than among other persons. Under bad circumstances there may be an effect of carbon monoxide, and, if the welded material contains lead, arsenic or zinc, poisoning by these substances may occur. -- Occ. Med.

There is no old-age limit at Thompson Products, Inc. Ability to do the job, and physical and mental fitness are the things that count. Elderly employees are assigned duties where their experience and knowledge will be most advantageous to themselves and the company. -- Employees Handbook, Thompson Products, Inc. (1947)

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- 429 The Problem of Carbon Monoxide Poisoning. S. Moeschlin.
Schweiz. med. Woch., 76, 508-510 (June 8, 1946)

In Switzerland the carbon monoxide content of lighting gas has been greatly increased in recent years, largely owing to war conditions. As a consequence there has been an increase in the number of cases of poisoning in Switzerland due to lighting gas. In the six years 1934-39, fatal gasings due to accident averaged 10 per year, but during the war years the numbers progressively increased, reaching 82 in 1944. The author discusses the literature on carbon monoxide poisoning. He concludes from his survey that besides producing anoxemia, carbon monoxide also causes specific toxic effects. If the possibility of the occurrence of these specific toxic effects is accepted, it follows that one must also accept the possibility of the occurrence of a chronic carbon monoxide poisoning -- a point which has been hotly disputed in the past. -- From Bull. Hyg.

- 430 Powder Metallurgy and Industrial Hygiene. J.D. Shaw and W.V. Knopp.
Am. Ind. Hyg. Assoc. Quart., 7, 26-29 (Dec., 1946)

Powder metallurgy involves the preparation of metal powders and their utilization in making solid articles. Twelve processes for preparing powders are described. The most frequent hazards are "chills" from inhalation of copper and zinc fumes, and cadmium poisoning, which causes nausea when the dust is in very minute concentration. No cases of lead poisoning have been experienced, because respirators were always worn, and the powder was not extremely fine. The industrial hygiene problems probably vary among the individual plants.

- 431 Neuropsychiatric Conditions in Railroad Employees.
F.G. Norbury. Ind. Med., 16, 122-125 (Mar., 1947)

In a previously screened group of railroad employees seen on a consultation basis all types of neuropsychiatric conditions were observed. Even though one connotation of disability among railroad employees is that of trauma as a factor it was such in only 65 of 452 patients who had various nervous and mental symptoms and disorders. Psychoneuroses and medical conditions with neurological or mental components made up almost half the total. The importance of a study of the individual patient's reaction to disability both from the standpoint of care and treatment and that of his or her relation to emotional, environmental and administrative factors is stressed. -- Author's summary.

Skin Diseases and Burns

- 432 Occupational Skin Diseases in the Steel Industry.
W.H. Rice. Kentucky Med. J., 44, 342 (Oct., 1946)

This is a general paper, listing causes of dermatitis in the steel industry, and giving suggestions to industrial physicians for dealing with the problem of cutaneous disease. Employment of women and changes in manufacturing processes are some of the factors responsible for the increase in cutaneous disease.

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- 433 Chemical Burns of the Rabbit Cornea. *Eye Pro Burns* C.P. Carpenter and H.F. Smyth, Jr. Am. J. Ophth., 29, 1363-1372 (Nov., 1946)

Experiments have been made upon corneal burns in the rabbit intended to assist in the therapy of human corneal burns in industry. The results of this work point to certain conclusions. (1) It is possible to grade the ability of fluid and dissolved chemicals to injure the cornea on the basis of application of a series of volumes and concentrations to the rabbit eye. The results correlate well with clinical experience in a plant handling a wide variety of compounds. (2) Alkaline molecules reaching the cornea are bound in some fashion to the epithelial cells and are not removed by prolonged washing with saline or water. Alkali bound in this fashion will be liberated from excised epithelium to injure intact epithelium in contact with the former. Presumably alkali is slowly liberated from its original site of fixation in the living eye to injure neighboring cells and result in a progressive burn. (3) Attempts to neutralize alkali on the cornea by prolonged flushing with dilute citric-acid solutions result in seriously aggravating the condition of the eye. Similar attempts to neutralize acetic-anhydride burns with milk-of-magnesia applications are less spectacularly harmful but they are not beneficial. (4) Alkali contacting the cornea penetrates it to a sufficient extent to raise the pH of the aqueous humor and threaten internal ocular structures. (5) The treatment of alkali burns upon rabbit cornea by denudation failed to demonstrate its effectiveness owing apparently to species differences in the rate of epithelial regeneration. -- Authors' conclusions.

Control Methods

- 434 Dust Extraction Plants: Principles. R. Poole. Textile Wkly., 37, 534-538, 584-590, 636-642 (1946)

The subjects included are the nature of dust particles, their effects on the respiratory passages, the principles of air-flow, and the efficiency of various dust extraction or filtration systems. A demonstration of vortices behind obstacles in an air stream accompanied the lecture, and representatives of various fields of interest contributed to the discussion.

- 435 New Type of Filter for Dust Work. J.H. Griffiths. Modern Power Eng., 32, 79, 96 (1945)

An effective air filter unit was constructed essentially of two rectangular metal cages (apparently of expanded metal), one fitting coaxially within the other. The inlet to the filter passed straight into the inner cage. A three-jet mist projector was fitted inside, near the end of the inlet tube, to blow a very fine water mist into the filter. The 5 in. gap between the two cages was packed with coarse filtering material--in this case 1/8 to 1 in. coal, though a variety of other materials could be used. The effective filtering area was 12 sq. ft. and such a filter would be capable of dealing with about 3000 cu. ft. of air per min. with a back pressure of 2- to 3-in. water column. The efficiency of the filter when dealing with heavy dust clouds would be about 95%, and this increases as the back pressure increases. -- C.A.

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- 436 Fiber Glass Clothing. Queries and Minor Notes.
J.A.M.A., 133, 900 (Mar. 22, 1947)

A boy aged three years is unable to wear wool garments because of an allergic skin reaction. Snow suits are available which are constructed of cotton exterior and lining and an interlining of spun glass instead of ordinary wool, so that the interlining does not come in contact with the skin. The question is whether skin irritation can occur from such garments and whether they are desirable and safe for a child with sensitive skin. The answer is that dermatitis from glass fabrics is in a large majority of cases due to direct physical irritation, and hence cannot occur if the glass does not touch the skin. Dermatitis from the resins binding the fibers is rare. If the child's sensitivity is only to wool such a garment should not irritate the skin.

Methods of Detection and Determination

- 437 Photo-Electric Smoke Measurement. Anon.
Gas Oil Power, 41, 233-235 (July, 1946)

The new Petty smokemeter is described. The equipment consists essentially of a tube through which exhaust gases are drawn, with a light source at one end and a photoelectric cell at the other. Sensitivity is adjusted by a shunt rheostat, and the output of the photocell is measured by a microammeter. Dimensions and methods of calculation are given.

- 438 Apparatus for the Rapid Assessment of Dustiness of Mine Air. J.I. Graham and H.A. Stanley. B.C.O.R.A. Quart. Bull., No. 8, 6-7 (Dec., 1945)

The standard pump used in the D.S.I.R. method for the detection of noxious gases is modified by fitting a brass plate on the headpiece, with a circular hole corresponding in size to the pump orifice. A strip of filter paper passes under this plate and is held against it by a metal gauze surrounded by a rubber seating. The size and mechanical features are so adjusted that 20 tests may be recorded on one strip. The sample is usually about 0.3 cu. ft., requiring 100 strokes. A cellophane cover on the strip permits direct visual comparison.

- 439 Dusts and Smokes in Flue Gases. G.A. Cave.
B.C.U.R.A. Month. Bull., 12, 61-70 (Mar., 1946)

A review of the literature on composition, method of formation, and chemical and physical properties of dusts in flue gases, and on behavior of dust in boiler installations.

- 440 Method of Determining the Size of Droplets Dispersed in a Gas.
R.L. Stoker. J. Appl. Phys., 17, 243-245 (Apr., 1946)

A method of determination of droplet sizes in the interior of a fog or mist is described. The principle is that if droplets strike a suitably coated surface which they do not wet, a track of the contact area is formed. Theoretical and experimental considerations are used in

deriving the relation of droplet diameter to track diameter. An apparatus using this principle is described briefly.

- 441 Detection of Poisoning Due to Benzene Compounds. P. Lambin.
Arch. Belges Med. Soc. et Hyg., 4, 25-38 (Mar., 1946)

The detection of toxemia due to benzene compounds is difficult in its early stages. When compared to a control group, those exposed to risk are found to experience an undue amount of fatigue, dryness of mucous membranes, somnolence, vertigo, dyspnea, headache, irritability, skin eruptions, loss of weight, and digestive troubles. No one of these, and no grouping of them, is in itself significantly diagnostic. Blood examinations are given first place for detecting incipient trouble; but the difficulty is in establishing a control standard. The author concludes that sickness of any sort in persons exposed to benzene compounds must be looked upon with suspicion, and should call for close medical supervision. Periodical medical examinations, however, cannot be relied upon to detect early indications of toxemia; the only sound method of protection is reduction to a minimum of the possibility of exposure to risk, and, wherever possible, having recourse to less poisonous solvents. — From Bull. Hyg.

- 442 A Rapid Method for the Determination of Chromic Acid Mist in Air.
L. Silverman and J.F. Ege, Jr. J. Ind. Hyg. & Tox., 29, 136-139 (Mar., 1947)

A rapid method for the determination of chromic acid mist in air consists of a hand pump (600 ml. volume) and papers impregnated with a stable *s*-diphenylcarbazine reagent. The filter papers are 99 per cent efficient and can be analyzed on location by means of permanent standards. The impregnated filter papers are stable for long periods if kept free from light and air. The method is adapted to rapid analysis of plating room and other atmospheres for appraisal of health hazards and ventilating equipment. — Authors' summary.

Editor's Note: Equipment is commercially available.

- 443 Continuous, Instantaneous and Registered Determination of Chlorine in the Air or Other Gas. A. Lamendin. Ind. chim., 33, 734 (1946) (French)

A conductivity method for the determination of chlorine and other gases. For chlorine the air is passed through a solution of hydrochloric acid, of which the initial concentration depends upon the approximate chlorine content of the air, at the usual rate of 20 liters per hour. The concentration is calculated from the increase in conductivity.

- 444 Determination of Hydrogen Sulfide in Gases. E. Field and C.S. Oldach.
Ind. & Eng. Chem., Anal. Ed., 18, 665-667 (Nov., 1946)

Two colorimetric methods have been developed for the analysis of traces of hydrogen sulfide in gases. The hydrogen sulfide is first absorbed in a caustic solution, and in the more sensitive method is converted to bismuth sulfide. The concentration of the resulting suspension is determined by means of a spectrophotometric measurement. In the absence of a spectrophotometer the sulfide is made to react with a uranyl-cadmium reagent and analyzed by visual comparison in a chromometer. With the spectrophotometric method as little as seven

micrograms of hydrogen sulfide may be determined with a precision of $\pm 10\%$. For larger samples the precision improves to $\pm 3\%$. The chromometer technique requires five times as much sulfide for equal precision, but still is far more sensitive than titration. — Authors' summary.

- 445 M-Dinitrobenzene: The Determination with Polarographic Methods. J. Roubal, K. Tuhy and F. Pokorny. *Zvlastni otisk z Casopisu lekaru ceskych.*, **85**, 1002 (1946)

Schering-Kahlbaum analyses were carried out on m-dinitrobenzene fed to groups of dogs in the form of starch cakes. Blood for estimation was taken from the heart and vena saphena. The polarographic wave was found before any signs of poisoning; the serum, plasma, and hemolyzed blood were prepared for this analysis by precipitation of proteins with 20% sulfosalicylic acid, and reduction by addition of an alkaline reducing solution of sulfurous acid. After these preparations a double wave was observed in most cases, followed by a slow change into a single wave. This is not the change caused by simple hydrogenation, but indicates a more complicated fermentative process in which *B. coli* may play a role. The double wave occurs chiefly in the plasma at first, but then undergoes a gradual shift in amplitude to the RBC's. Thus a change in dinitrobenzene takes place in the RBC's which manifests itself by the reduction of a nitro group with a lower excretion potential, and a fermentative process is probably involved with which the binding of the product is related. — J.I.H.&T.

- 446 Carbon Dioxide Production of Humans at Sea Level and at Low Barometric Pressures. W.E. Berg and S.F. Cook. *Am. J. Physiol.*, **147**, 217-221 (Sept., 1946)

The carbon dioxide elimination of humans, either under basal or non-basal conditions, is significantly decreased at a simulated altitude of 30,000 feet as compared with the sea level values. Two methods for measuring the carbon dioxide elimination were used. One method involved collection of the expired gases in Douglas bags, the analyses being made at sea level with the Haldane gas analyzer. The second method employed a thermal conductivity analyzer for carbon dioxide in oxygen; the analyses and volume measurements were made directly at altitude. The average decrease of carbon dioxide elimination of non-basal subjects at altitude as measured by these methods was 8.6 per cent. The average decrease for subjects under basal conditions was 6.4 per cent. — Authors' summary.

- 447 Study of the Structure of Fog by an Ionized Electric Field. M. Pauthenier and E. Brun. *Rev. Gen. Elect.*, **51**, 58-67 (Jan., 1942) (French)

A critical review of some earlier methods for determining the distribution of drops in clouds and fog according to size, is first given. Two methods, one by electrical precipitation, the other by photography, are described in detail.

- 448 Additional Note on the Study of Fog Structure by an Ionized Electric Field. M. Pauthenier, E. Brun and L. Demon. *Rev. Gen. Elect.*, **52**, 200-201 (July, 1943) (French)

Apparatus for continuous recording in the photographic method given in the previous abstract is described. The ratio of drop diameter to size of imprint on the sensitive paper is constant to within 15% and is not appreciably affected by a 10% variation in potential.

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- 449 Visual Thresholds as an Index of Physiological Imbalance During Anoxia. R.A. McFarland, M.H. Halperin and J.I. Niven. *Am. J. Physiol.*, 142, 328-348 (Oct., 1944). Visual Thresholds as an Index of the Modification of the Effect of Anoxia by Glucose. Same authors. *ibid.*, 144, 378-388 (Aug., 1945). Visual Thresholds as an Index of Physiological Imbalance During Insulin Hypoglycemia. Same authors. *ibid.*, 145, 299-313 (Jan., 1946)

The results include: (1) discussion and demonstration of the visual thresholds method as a measure of anoxia and of hypoglycemia; (2) use of the method to show the beneficial effect of glucose in anoxia; both before and after; oxygen deprivation; and (3) demonstration that breathing 100% oxygen partly counteracts hypoglycemia.

- 450 Definitive Equations for the Fluid Resistance of Spheres.

C.N. Davies. *Proc. Phys. Soc.*, 57, 259 (1945)

Correction factors are derived for normal equations of flow of spherical particles through fluids. They can also be applied to sedimentation of particles in air.

- 451 High Molecular Weight Polyglycols as Reagents in the Determination of Inorganic Phosphate. C.B. Shaffer. *Proc. Soc. Exptl. Biol. & Med.*, 63, 562-565 (1946)

A method is described for the precipitation of phosphate phosphorus as a barium-polyglycol-phosphomolybdate complex which may be filtered and dried to constant weight at 100°-110°. Evidence is presented to show the applicability of this reaction to phosphate determinations on biological materials, and a comparison is made of this procedure with the strychnine phosphomolybdate (Emden-Fetter) method. — Author's summary.

- 452 Mercury Vapor Hazards in Certain Chemical Laboratories. L.E. Renes and H.E. Seifert. *Am. Ind. Hyg. Assoc. Quart.*, 7, 21-25 (Dec., 1946)

Investigation of many chemical laboratories, which employed metallic mercury in chemical apparatus used for analytical work, revealed mercury vapor concentrations in excess of the maximum allowable concentration of 0.1 milligram per cubic meter of air. Accidental spills and poor house-keeping resulted in widespread and general contamination of floors and work benches. Treatment of contaminated surfaces with polysulfides was not found to be an adequate control measure. Thorough washing of the contaminated surfaces followed by waxing was most effective in reducing the exposure. Prevention of mercury dispersion was found to be essential and could be accomplished by means of trays placed underneath the apparatus to catch accidental mercury spills. Tables are presented showing the increase in mercury contamination revealed by consecutive investigations when appropriate control measures were not taken. The effective results obtained by various control measures are shown in tabulated form. — Authors' summary.

About six million World War II veterans have taken advantage of education and training benefits under federal laws. Right now, about 2-1/2 million are enrolled, about 750,000 of them in on-the-job training, the rest in schools and colleges. Altogether, two-thirds of a million have applied for vocational rehabilitation for disabled veterans. — *The Foreman's Letter* (April 9, 1947)

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Laboratory Toxicological Studies

- 453 A Comparative Study of Live and Killed Vaccines in Experimental Tuberculosis. A Preliminary Note. B.J. Olson, K. Habel and W.R. Piggott. Pub. Health Repts., 62, 293-296 (Feb. 28, 1947)

A killed vaccine prepared by ultraviolet irradiation of a virulent tubercle bacilli (strain 199-RB) with the Oppenheimer-Levinson apparatus and administered in three doses was equal in effectiveness to a single dose of live BCG and was more effective than three doses of the latter against a massive dose of virulent tubercle bacilli (199-RB) in guinea pigs. The ultraviolet-killed bacilli of the virulent strain made a more effective vaccine against this strain than the same virulent strain heat-killed or ultraviolet-killed BCG. Inasmuch as in this initial work the effectiveness of the ultraviolet-killed strain was demonstrated by challenge with its homologous strain, further work is in progress to test its effectiveness against heterologous virulent strains. The comparative antigenicity of other virulent strains is also under study. — Authors' conclusion.

- 454 Antimony Compounds in Tuberculosis. Their Effects on Experimental Tuberculosis in Guinea Pigs. H.M. Rose, A. Gellhorn and J.T. Culbertson. Am. Rev. Tuberc., 44, 299-304 (Sept., 1946)

The relationship of exposure to toxic agents to the aggravation of tuberculosis is a matter of great importance. These authors have studied the effect of various antimony compounds on the course of tuberculosis (strain H 37) in guinea pigs. Their experiments indicate that intensive treatment with the antimony compounds anthiomaline, fusidin, neostam and neostibosan did not exert any deleterious effect on the course of the tuberculous infection in these animals. — J.I.H.&T.

- 455 Is Percutaneous Absorption of Benzene Possible. A.N. Cesaro. Med. lavoro, 37, 151-156 (1948) (Italian)

Benzene vapor and liquid benzene were applied to the thoracic skin of subjects so that vapors could not be inhaled. Since no detectable benzene was present in the expired air and the inorganic sulfate per total sulfate ratio was not changed it was concluded that benzene is not absorbed percutaneously. — C.A.

- 456 Relation Between Alveolar Carbon Dioxide Tension and Susceptibility to Decompression Sickness. R. Hodes and M.G. Larrabee. Am. J. Physiol., 147, 603-615 (Dec., 1946)

Hodes and Larrabee say that cyclic and diurnal changes suggest that susceptibility to decompression sickness is influenced by physiologic factors which vary in a similar fashion. They investigated the relation between alveolar carbon dioxide tension and susceptibility to decompression sickness by comparing the carbon dioxide tension in alveolar air collected shortly before decompression with the ability of the subject to remain for two hours in an altitude chamber at a pressure equivalent to 38,000 feet. They found that susceptibility increases with

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alveolar carbon dioxide tension. Subjects were forced to descend whenever the alveolar carbon dioxide tension was more than 43 mm. of mercury. In contrast, no subject was forced to descend when his alveolar carbon dioxide tension was less than 38 mm. of mercury. Each subject whose tolerance varied during the course of these experiments passed fewer tests when his alveolar carbon dioxide tension was high than when it was low. -- J.A.M.A.

- 457 The Treatment of Cadmium Intoxication in Rabbits with 2,3-Dimercaptopropanol (BAL) and Other Mercaptans. A. Gilman and others. J. Pharmacol. Supp., 97, 85-101 (Aug., 1946)

The effect of BAL, BAL glucoside and the monothiols l-thiosorbital and l-thioxylitol on poisoning produced by the intravenous injection of lethal doses of cadmium chloride is reported in considerable detail. Both BAL and the glucoside, administered before or after the cadmium chloride, prevented fatal poisoning and ameliorated the symptoms. However, BAL administered prior to the injection of cadmium chloride caused fatal renal insufficiency, which was much less marked in the other cases. Thiosorbital and thioxylitol similarly used were relatively ineffective. -- From J.I.H.&T.

Editor's Note: See Absts. 231, 232 for related papers.

- 458 Microscopic Detection of Cadmium Oxide Particles in Lung Tissue. R.E. Thiers, E.M.S. Arthur, J.R. Mills, D.R. Hamly and F.E. Beemish. J. Ind. Hyg. & Tox., 29, 129-133 (Mar., 1947)

A method is described whereby minute solid particles of cadmium oxide can be made directly observable under the ultraviolet microscope. All particles of sizes down to the limit of resolution of the microscope can be seen as the green-fluorescent cadmium 8-hydroxyquinolate dihydrate. Comparable photomicrographs can be made under ultraviolet and visible light. -- Authors' summary.

- 459 The Detoxifying Principle in Liver. J.D. de Santibanez. Rev. facultad. cienc. quim. (La Plata), 18, 177-183 (1943, publ. 1945). (Spanish)

A crystalline substance was obtained from liver and identified as the sodium salt of xanthine. It has a protective effect against poisoning with dinitrophenol and inhalation of chloroform and carbon tetrachloride, but is ineffectual against the intraperitoneal application of ammonium chloride at a 100% lethal dose. -- C.A.

- 460 Acute Phosgene Poisoning. Effects of Plasma Replacement. Experiments With Dogs and Goats. F.C. Courtice and G.L. Foss. Lancet, 2, 670-671 (Nov. 9, 1946)

The effects of transfusions of four-times-concentrated serum and of normal plasma and serum have been investigated in dogs and goats with phosgene poisoning. The transfusions have no lasting effect in relieving the hemoconcentration and have a definite detrimental effect by increasing the pulmonary edema. Transfusions are therefore contra-indicated in the presence of gross pulmonary edema. -- Authors' summary.

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- 461 Variations in Lead in the Blood and Urine Following the Injection of Small Doses of Soluble Lead Salts. E. Antonioli and F. Tulfigno. Med. lavoro, 37, 156-160 (1946) (Italian)

Administration of lead to human beings in amounts of 12 and of 37 mg. caused a slight rise in blood-lead levels comparable to that following eating of a normal meal (which contains about 1 mg. of lead). Assimilation of 65-70 mg. of lead produced a doubling of the blood-lead level. In no case did ingestion of these amounts cause an increase in renal excretion of lead during the eight hours following the dose. — C.A.

- 462 A Study of Lewisite Lesions of the Eyes of Rabbits. Ida Mann, A. Pirie and B.D. Pullinger. Am. J. Ophth., 29, 1215-1227 (Oct., 1946)

A number of experiments on the action of lewisite (gas and liquid) on the eyes of rabbits demonstrated severe effects, even with small doses. Perforation and loss of an eye can be caused by 0.001 cc. Other effects are vacularization, dense fibrous scarring, and edema.

Industrial Relations, Personnel

- 463 Industrial Health Information for Employees. Allis-Chalmers Mfg. Co.

The Health and Safety Department of Allis-Chalmers Manufacturing Company, West Allis, Wisconsin, prepares mimeographed bulletins on health and safety for distribution to their Allis-Chalmers employees. Information about them can be obtained from Mr. W.F. Scholtz, Supervisor, Industrial Health Section of the Department. The titles of the bulletins so far received are: Methods of Sterilization of Protective Equipment at West Allis Works; Preliminary Information on Rat Control; Sand Blast Helmet Procedures; Safety Line Marking Machine, Goggle Cleaning Solutions; Safe Practice Bulletin for Radio Frequency Heating Equipment; and Toxicity of Some Chlorinated Solvents.

Editor's Note: The Foundation welcomes information from other members describing any activities for industrial health education.

- 464 A Guide for the Development of Medical Services. I. The Small Plant Dispensary. L.A. Kagen. What's New in Ind. Hyg., 3, 6-9 (Jul.-Sept., 1946)

Suggestions are made for the construction, equipment and operation for a dispensary in a plant with less than 500 employees. The most important include: location at a central point, lighted and ventilated, relative freedom from noise and vibration, a minimum floor area of 200 sq. ft., sound-proof partitions, light colors, kept clean and hot and cold water connections. A possible layout is illustrated. The equipment list of the Council on Industrial Health is given. A full-time nurse should be employed for 150 employees or over, otherwise a part-time nurse. The duties of the nurse and part-time physician are discussed.

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- 465 The Value of Pre-employment Physical Examination in Our Safety Program. Syble Chaney. Ind. Nursing, 6, 30-32 (Feb., 1947)

From a plant with several years experience in pre-employment examinations, a number of instances are related in which examination would have prevented accidents and unjustified compensation, and others wherein the examinations have prevented accidents and had other salutary results. Included in the cases told are an abdominal operation shortly before the examination, hemorrhage from tuberculosis, high blood pressure, infected extremities, and especially defects of vision. Many who needed glasses without being aware of it have expressed their appreciation for the company's finding out the defect, and the examinations have prevented many accidents and have greatly increased efficiency.

- 466 Part-Time Nursing Services to Small Industrial Plants. Anna M. Fillmore. Pub. Health Nursing, 32, 453 (Sept., 1946)

Two plans for providing nursing service to small plants are proposed. The first is the employment of a full-time nurse who may be assigned other duties in addition to nursing, such as personnel, safety or clerical work. The second is a plan in which a visiting nursing agency makes available a well prepared industrial nurse to serve two or more plants on a part time basis. Adequate facilities for a small medical department should be provided. -- From Occ. Med.

- 467 Occupational Disease Control. A.G. Cranch. W. Va. Med. J., 42 (May, 1946)

In summary, the fundamentals of control may be stated as follows: (1) Knowledge of materials handled, what they are, what may be their physiological action, what additional products may be formed during their use and the hazards of these resulting products. (2) Engineering methods to control all exposures, as far as possible, at the source. (3) The use of properly designed and selected personal protective equipment when indicated. Strict observance of good personal hygiene. (4) Physical examinations. These are most essential for proper placement of men in such physical condition that the exposures of their work will not constitute an undue hazard and for early detection of any departure from the normal due to exposure. The object should be to remove the employee from exposure before any disease or disability is caused. (5) If, in spite of the above, because of failure of recognized control measures, accidental increase of exposure, the use of material of undetermined hazard, or unusual individual susceptibility, occupational disease does occur, the patient should be placed promptly under properly directed medical treatment and a thorough study made to determine the source of the disease in order to prevent its occurrence in others. -- Author's summary.

- 468 Current Trends in Industrial Psychiatry. L.E. Himler. Am. J. Psychiat., 103, 149 (Nov., 1946)

Himler shows that in his work as catalyst to all activities which have to do with the handling of people and the prevention of damaging interpersonal relations the industrial psychiatrist cannot work in isolation. Some of the broader consulting and educational functions in which the industrial psychiatrist must play a leading part are: (1) correlation of technics for improving the selection, placement and

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promotion of employees presenting some degree of mental, emotional or intellectual disorder; (2) elucidation of technics for uncovering actual as well as potential "problem employees" and for the handling of such persons by supervisors and medical and personnel consultants, including the line of referral for those who require psychologic or psychiatric consultations; (3) participation in training programs for counselors and supervisors in respect to understanding and handling the psychologic factors influencing the productivity of both normal and problem workers; (4) checking the effectiveness of, and developing technics for improving, all employment, medical and personnel functions involving interviewing and counseling; (5) provision of a consulting service open to both management and labor union officials, as well as to others who voluntarily request interviews, and (6) organization of research projects which throw light on causes and remedies of personality problems on both employee and supervisory levels.

— Occ. Med.

- 469 Personality and Psychosomatic Disturbances Among Industrial Personnel. A. Heider and B. Mittelman. Am. J. Orthopsychiat., 16, 631 ff. (Oct., 1946)

The psychologic and psychiatric procedures instituted at the Caterpillar Tractor Company are described. A testing and interviewing technic was introduced to assure better selection and placement of employees. A psychiatric interview was given soon after employment to prevent aggravation of existing disturbances and development of new ones. Foremen were trained to recognize and manage minor emotional problems. Psychiatric counseling and brief therapy were made available to those with personality disturbances. Psychologic and psychiatric technics for insuring the adjustment of the veteran to industrial situations were instituted. These procedures were found to be valuable both to the employee and to management. — From Occ. Med.

- 470 Psychiatry in Industry. F.W. Dershimer. Am. J. Psychiat., 103, 145-148 (Nov., 1946)

The author presents a preliminary report on a full time psychiatric program in one industry based on its first two years of existence. He clears some misconceptions of industrial psychiatry and relates experiences with new methods. They include regular meetings of a research group to discuss their own emotions and problems of managing themselves or their personnel; this is genuine preventive psychiatry. Emphasis should not be placed on psychiatric screening and placement examinations, but rather on the study of problems as they arise. One unsolved problem is the habit of many physicians and some psychiatrists, of advising all "nervous" patients to take time off. This practice in the author's opinion, tends to aggravate the condition. A psychotherapeutic procedure with interviews while the patient continues working gives better results.

- 471 Vacations for Industrial Workers. Policyholders Service Bureau, Metropolitan Life Insurance Co., 1 Madison Ave., New York 10, N.Y. 43 pp. (1946)

Beginning with one company in 1883, the idea of paid vacations for industrial workers has gained greatly. Early in this century vacations became fairly common for salaried employees and during the war the privilege was extended to many hour and piece workers. Four out of five employees are now eligible for vacations. This booklet reports on the

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practice of 122 American companies. In Canada vacations have been made a matter of legislation, but not in the United States. The practices of the various companies vary as to: (1) length of vacation, uniform or depending on length of service; (2) variation with length of service; (3) computation of vacation pay; (4) vacations for part-time workers and apprentices; (5) a shutdown; (6) splitting of vacations; (7) vacation privileges when leaving the company or being laid off; (8) leaving for the armed service and returning therefrom; and a number of other details. These points are all discussed. Scheduling of vacations in the absence of a shutdown, informing foremen, and telling workers about the vacation plan are also points on which there are suggestions.

Symposium on Working Capacity.

The following papers were presented at the Seventh Annual Congress on Industrial Health, Boston, October 1, 1946.

472 Respiratory and Circulatory Capacities of Normal Men.

D.B. Dill. Occ. Med., 2, 531-535 (Dec., 1946)

Respiratory and circulatory capacities are defined and their inter-relations are explained. It is shown that the limiting respiratory capacity is greater than the amount of ventilation while undergoing severe types of work. The difficulties in measurement of cardiac function, and sometimes in distinguishing circulatory from respiratory capacity, are pointed out. Need of additional research is indicated.

473 Nutrition and Capacity for Work. A. Keys.

Occ. Med., 2, 536-545 (Dec., 1946)

Working capacity and actual on the job performance must be differentiated, though nutrition can affect both. High working capacity and productivity are impossible in really bad nutritional states. Different nutritional defects do not affect the several bodily functions in the same way. Since different jobs make different functional demands, generalization is impossible. Real nutritional defects must be discovered and corrected. The characteristics of "subclinical" nutritional deficiencies are highly controversial and the major uncertainties must be resolved before practical "correction" is attempted. The potential benefits of vitamin supercharging have been the subject of unwarranted claims. Further research on the long range effects is desirable. Little is known about special dietary needs for special jobs. Most claims are entirely unwarranted. The distribution of meals needs further study. Snacks between meals appear useful in industry but perhaps chiefly for psychologic reasons. The substitution of enthusiasm for sober critical research in human nutrition is deplorable. Animal experiments provide few data which have quantitative application to man. Industry, government and labor all have responsibilities to advance knowledge on the relation between nutrition and working capacity and productivity. — Author's summary.

474 Industrial Pulmonary Diseases and Capacity for Work.

G.W. Wright. Occ. Med., 2, 546-549 (Dec., 1946)

The question of the effect of siderosis, anthracosis, asbestosis, and welding fume sickness, on working capacity has received little study, but the general evidence is that siderosis and anthracosis

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have no effect on working capacity, and inhalation of welding fume very rarely. The pulmonary disease due to beryllium generally lowers working capacity with dyspnea and loss of weight. The effect of silicosis and asbestosis has been studied more extensively, but on account of great variations in normal working capacity, the presence of small changes cannot be determined. The silicotic person frequently retains a sound and usable capacity for physical effort, and even when emphysema is present, the loss in breathing power is frequently compensated by development of more power in muscles in breathing, and probably also by compensatory mechanisms in the circulatory system. Silicotics should be encouraged to work that will require the use of these compensatory mechanisms; idleness leads to a more rapid deterioration. Utilization of the skills and working capacity of silicotics is urged, not only because they can contribute to the economy, but also because employment is the best therapy.

475 Heart Disease and Working Capacity in Industry.

P.D. White. Occ. Med., 2, 550-557 (Dec., 1946)

The author reviews a paper which he presented 25 years ago, and summarizes the developments in the study of heart disease that have occurred since that time. Of the eight types of heart disease that he discusses, some have almost disappeared, and most others need no longer be feared. The responsibility of industry is discussed briefly; it is usually difficult to determine. Special functional tests are not as reliable as actual observation during work. Most types of heart disease should not prevent the patient from doing a reasonable amount of work.

Symposium on Fitness for Work.

The following papers were presented at the Seventh Annual Congress on Industrial Health, Boston, October 2, 1946.

476 Essential Factors for Health and Fitness.

M. Fishbein. Occ. Med., 2, 566-571 (Dec., 1946)

The records of rejections by the armed service, incomplete and irregular as they are, give a misleading picture of the fitness of Americans. Many who were rejected did excellent work in other fields. Contrary to the statements of some politicians, the actual disabilities of a large number of those could not have been prevented by medical treatment. The author proposes a long-range fitness program, beginning with the parents, giving prenatal care and close watch during the first six years, and intensive health education in the elementary school, with frequent physical examinations.

477 Need of a Campaign for Physical Fitness.

R.H. Eanes. Occ. Med., 2, 572-580 (Dec., 1946)

Col. Eanes presents a more detailed analysis of some of the registration figures, and a program of health improvement, including immediate and long-range plans. The latter follows the lines given by Dr. Fishbein, and the immediate plan includes convincing every American that physical fitness is necessary, and to enlist the support of industry and the schools, to aid in education and in discovery of defects that can easily be remedied.

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- 478 Does American Education Produce Physically Fit Workers?
D.F. Smiley. Occ. Med., 2, 581-586 (Dec., 1946)

The production record of American industrial workers in the recent war is evidence that American education does produce physically fit workers. However, all types of physical examinations show that students have defects that could be remedied. Obviously there is need for a practical plan in each community for getting all remediable defects corrected as early as possible. Particularly, the average high school graduate does not have highly developed muscles or highly developed motor skills. For the occupations in which those qualities are necessary, additional equipment and staff will be necessary for training. Production losses in industry resulting from diminished efficiency due to faulty health habits are greater than losses resulting from absence due to illness or accident. Though it is in the preschool period that training in health habits bears its greatest fruit and in the school that health education is most effective, there is still great need for continuing health education in industry.

- 479 Evaluation of Fitness. Ruth E. Boynton. Occ. Med., 2, 587-592 (Dec., 1946)

Fitness can be evaluated only with reference to the particular job in question. Examinations should be undertaken with the aim of matching the worker's ability and the demands of the job, and emotional capacities are as important as physical ability. The insufficiency of the early rating methods led to the system and forms used by the U.S. Employment Service, and their use is described.

- 480 Psychosomatic Elements. When the Foreman is a "Pain in the Neck."
C.C. Burlingame. Occ. Med., 2, 593-598 (Dec., 1946)

The expression "pain in the neck" is used figuratively, but a pain in the neck and other physical disturbances often arise from emotional causes. Moreover, the "will to do" depends very largely on emotional factors which leadership can easily arouse or destroy. When the relationships between the employee and the foreman or the conditions of the job are such that the worker cannot meet the demands, one of three things will happen: (1) he will quit; (2) he will project his sense of inadequacy and discontent in visible dissatisfaction and criticism of job conditions and fellow workers; or (3) he will get sick. The modern foreman must be a teacher, and must be an expert in understanding emotional drives and the will to do. The foreman cannot be successful unless the higher officers of management have the same concept. Set programs for all workers must be avoided, and it is as serious a mistake to exaggerate the physical effect of emotions as to underestimate it. Psychomatic disability is not peculiar to the workman at the bench; rather the highest executive is equally likely to be affected.

The Office of Vocational Rehabilitation reports that more than 1,400 blind persons were trained and placed in employment under the State Federal vocational rehabilitation program during the 1946 fiscal year. The placements were mainly in industrial work and in business and clerical occupations. The total yearly income of the group rose from \$372,000 before rehabilitation to over a million and a half dollars after rehabilitation. — From Employment Ser. Rev. (U.S. Dept. of Labor), 14, 2 (Feb., 1947)

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- 481 Conserving the Health of Management. E.F. Lutz.
 Occ. Med., 2, 599-605 (Dec., 1945)

The main points necessary for the success of a plan for diagnostic health examinations are: (1) The plan must be on a voluntary basis. (2) Reports must be confidential and must be made only to the person examined or the physician whom he designates. (3) The examining clinic must have a terminal interview with the person examined during which the physician informs the person examined in layman's terms of any impairments which he has discovered. (4) A short written report in layman's language, as well as a more highly technical report for the study of a physician, is of paramount importance. (5) There should be some method for notifying the executive when it is time for his repeat examination. (6) The examinations given should be thorough and without too much delay. (7) Approval of all charges and diagnostic procedures is necessary, but charges for restorative or curative treatment should not be approved. For instance, refraction for glasses should be approved but the purchase of the glasses should not be approved. (8) Some form of material on health education, such as a letter of two pages, could be distributed to this group each month. -- From Author's summary.

- 482 Civil Readjustment Lecture, U.S. Navy. Civil Readjustment Section, Civil Relations Division, Executive Office of the Secretary, Navy Department, Washington, D.C. 50 pp. (Feb. 1, 1947)

This booklet is prepared for use by Civil Readjustment Officers at all activities performing the separation function, as a parting lecture to all separatees on their rights and benefits under the G.I. Bill of Rights and other veterans legislation. This lecture is designed to be used in connection with the Civil Readjustment charts. It explains in simple language the provisions of the G.I. Bill of Rights and the procedure to be followed in obtaining mustering out pay, terminal leave pay, obtaining loans, reclaiming the old job, using Navy skills and records, obtaining education and job training, and other privileges.

- 483 Medical Treatments in Gulf Coast Shipyards. C.M. McGill and H.P. Grinton. Occ. Med., 2, 558-565 (Dec., 1946)

The results of certain medical activities in 22 Gulf Coast shipyards during the war years are reported. The total treatment rate was approximately one visit per employee per month to the medical department. Four fifths of these visits were on account of new injuries or redressings. The size of the shipyard did not greatly affect the treatment rate. There were no important sex differences in the total rate, although women generally had more non-occupational treatments. Eye injuries represented almost one half of all new injuries reported, and cuts accounted for one fourth. Sex differences were noted in the type of new injuries. There were greater percentages of burns and scalds, and eye flash, among women and of cuts and other eye injuries among men. -- Authors's summary.

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Rehabilitation

- 484 A Few Remarks on Rehabilitation With the Presentation of a Model Community Service and Center. A.R. Shands, Jr. Nebraska State Med. J., 31, 480-484 (Dec., 1946)

The needs, principles, and methods of rehabilitation are first discussed, with emphasis on cooperation of many members of a reconstruction team, consisting of the physician, the physical therapist, the occupational therapist, the social worker, the vocational teacher, the director of vocational guidance, the vocational placement worker, and sometimes other consultants in special fields. The author then outlines a plan adaptable to communities of various sizes. There must first be a survey of the local facilities and available trained personnel. The educational part of the team can often be found in the local schools, and the state agencies can help in locating the necessary members. The idea of employing handicapped workers must then be sold to the small industries, the storekeeper, the garage manager, etc. Suggestions are given for the general operation of the center (from the Sub. Committee on Civilian Rehabilitation Centers of the Baruch Committee), and plans for a satisfactory building are presented. It has been estimated that if such a center has 250 patients per day and each patient requires 60 days for rehabilitation the cost per patient should be approximately \$125.00. The average annual wage of persons who received the benefits of vocational rehabilitation in State and Federal programs in 1944 was \$1,768.

- 485 Rehabilitation of the Tuberculous. Proceedings of Conference, Washington, D.C., March, 1946. National Tuberculosis Assoc. 138 pp. Price \$2.00. (1946)

This conference was sponsored jointly by the Office of Vocational Rehabilitation, Federal Security Agency, The Tuberculosis Division of the U.S. Public Health Service and The National Tuberculosis Association, and was held in Washington, March 4-6, 1946. The papers presented are given nearly in full, and the subjects include the functions of the nurse, the social worker, the educational counselor, the occupational therapist, and the rehabilitation counselor in the rehabilitation of the tuberculous, the terminology of rehabilitation, and recommendations for the solution of some of the problems. Discussion of each paper is also reported.

- 486 Rehabilitation. The Report of the Medical Advisory Committee. Department of Health for Scotland, Edinburgh, 1946. (From Bull. Hyg.)

This report stresses the social aspects of rehabilitation, from primary medical treatment to complete occupational reinstatement. It is important that the patient's will to recover be stimulated, particularly in those of low intelligence whose thoughts are centered upon compensation. A scheme carried out by a motor company is mentioned where a workshop has been set aside for injured men to carry out selected work designed for exercising the injured part on a gainful basis. The almoner, who is in touch with the home conditions of the rehabilitee, and who plans his occupation when function is restored as much as possible, is important in

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any scheme. This attitude of treatment may be adopted in cases of rheumatism, heart and nervous diseases, and tuberculosis of bones, as well as primarily surgical conditions. The Disabled Persons Act, 1944, made permanent plans initiated to restore workers back to war work. Officers are appointed to ensure that employers find work for a definite quota of disabled persons; and certain occupations are being designated to disabled persons only. At a fitness centre in Gleneagles, two points became clear: (1) the advisability of eliminating as far as possible all psychological treatment in industrial rehabilitation; and (2) the prospect of compensation is a strong deterrent factor in the return of many to work. With preventive exercises for out-patients all but the most serious cases returned to work. — J.I.H.&T.

Public Health

- 487 Fighting Out Tuberculosis in Our Time. Anon. Statist. Bull. Metropol. Life Ins. Co., 27, 1 (Nov., 1946)

Since the turn of the century the death rate from tuberculosis in the United States has been reduced from 200 per 100,000 to about 40. In five states it has fallen below 20 per 100,000. The campaign against tuberculosis has been intensified greatly through increased funds and through the activity of the U.S. Public Health Service. The opinion is expressed that tuberculosis may cease to exist in our time. Among the favorable factors are decreased chances for infection, better food, better working conditions, and more adequate knowledge of personal hygiene. Facilities for detection in early stages have made great advances. However, tuberculosis still ranks high among the causes of death at most age periods. It remains first cause of deaths of white women from 20 to 34 years, and second only to accidents in white men from 20 to 39. In Negroes it remains much the most frequent cause for corresponding ages. The attack on the disease may well be concentrated in those areas and among those persons in our population where infection is most prevalent and death rates are highest. — from J.A.M.A.

- 488 The Evolution of Official Tuberculosis Control in the United States. R.G. Paterson. Pub. Health Repts., 62, 336-341 (Mar. 7, 1947)

This paper reviews the history of the development of the official tuberculosis control plan in the United States, beginning with the organization of The Pennsylvania Society for the Prevention of Tuberculosis in 1892 to the establishment of the official Tuberculosis Control Division of the U.S. Public Health Service, 52 years later. The question why the evolution took so long is discussed. It was largely on account of conflicting opinions, and especially on account of the difficulty in convincing the public of the contagious nature of the disease.

- 489 Medical Social Service in Tuberculosis Control. Medical Social Unit, Tuberculosis Control Division (Extraction of Misc. Publication No. 37, U.S. Public Health Service). Pub. Health Repts., 62, 327-336 (Mar. 7, 1947)

The functions of the medical social worker are elaborated, with special reference to tuberculosis. Briefly, they include case finding,

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serving as medical social consultant, participation in community planning for health and welfare, participation in and supervision of education of medical students specializing in social work, and participation in research

- 490 At Your Service. U.S. Public Health Service. Misc. Publ. No. 33. 16 pp. (1945) Price 10 cents from Supt. of Documents, Washington, D.C.

This pamphlet explains in the simplest form and with illustrations the need of industrial hygiene and the availability of local, state and federal industrial health services for investigation and assistance.

Accident Prevention

- 491 Air Safety Record is Being Steadily Improved. W.E. Kline. Dom. Commerce, 35, 6-10 (Apr., 1947)

In assisting in the development of civil aeronautics and air commerce, the Civil Aeronautics Authority is concerned with air navigation aids and facilities. This article assures the businessman and others who are actual and prospective air travelers that precautions are being taken for their safety. Special study is being given to traffic control in the vicinity of busy airports in bad weather and for the provision of instrument aids for bad-weather flying. -- Author's summary.

- 492 Health and Miscellaneous Standards in Metal Mines. Metal-Mine Accident-Prevention Course, Section 7. Miners' Circ. 57. U.S. Bureau of Mines. 70 pp. (1946) Price 20 cents from Supt. of Documents, Washington 25, D.C.

Part I deals with health, and is mostly devoted to a brief account of silicosis and its prevention, including wetting and dust collecting methods. The hazards of carbon monoxide and infections and sanitation methods are discussed briefly. In Part II miscellaneous hazards and safety measures are considered. The hazards include handling materials, inrush of water, and miscellaneous accidents, protective equipment and illumination as preventive measures for eye and other injuries are discussed. The third and final section takes up supervision, education and discipline. Extensive quotations from the Anaconda code and from earlier safety codes (Inf. Circ. No. 7061) are included. It is emphasized that safety does not depend upon general rules so much as on the thorough and patient instruction and training of supervisors and miners in all matters pertaining to safety.

- 493 Explosives Accidents in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course, Section 5. Miners' Circ. 58. U.S. Bureau of Mines. 82 pp. (1947) Price 20 cents from Supt. of Documents, U.S. Govt. Printing Office, Washington 25, D.C.

(This circular is one of a series on accidents in coal mines. The others so far prepared are listed on the first page, and again, with dates, number of pages, and prices, on the last pages. Some have been reviewed in earlier issues of the Digest. Another series deals similarly with metal mines.) Statistics of explosives accidents are first

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presented; they show a decrease over recent years, largely due to the use of the much safer permissible explosives. The characteristics of permissible and non-permissible explosives are described. Full directions for proper shot-firing and preparation for it are given. A considerable section of the Circular gives regulations and instructions for the safe storing, handling, and transportation of explosives. Causes of explosions are analyzed; and a number of specific accidents and methods by which they could have been avoided are discussed. As in the other circulars, an appendix presents a number of suggested topics for class discussion, and numerous references. In conclusion: "Maximum safety in the transportation, handling, and use of explosives has not been accomplished, but progress is being made. Education, supervision, and adherence to recognized safe practices should be maintained to continue the recent experience with explosives to the end that accidents from this source will be reduced to the lowest possible number."

494 How to Raise Efficiency and Reduce Accidents in Industry.

Jean Rakowski. Ind. Nursing, 6, 13-16 (Feb., 1947)

The causes of accidents may be grouped under five heads: ignorance, predisposition, inattention, depression, and pre-occupation. The author gives practical examples of each of these causes, with suggestions for avoiding them. Accidents due to ignorance, especially of men new on the job, can be avoided by full directions and patient consideration at the start. In cases of more general and persistent ignorance, the employee should be transferred to a less dangerous job. Predisposition has several forms, but a general method of training is to standardize warning signals until the response is automatic. Inattention is often due to outside causes that should be investigated. Psycho-motor retardation, sluggishness, or depression, may be caused by diseases and drugs, but plant conditions such as illumination, ventilation and noise are sometimes responsible. The remedy for pre-occupation, usually having an emotional cause, comes under the heading of mental hygiene, and consists of tracing mental disturbances back to their cause, and if possible removing the cause. Ultimately it is hoped that mental hygiene will find its rightful place in industrial medicine.

Special Diets According to Jobs to be Studied

Your doctor may some day in the future prescribe a diet for you according to your particular job. Whether special diets could protect workers from illness and what such diets should be, are subjects of a long-range research project at Columbia University. Dr. Leonard J. Goldwater is in charge of the research under a grant of \$11,000 from the U.S. Public Health Service's National Institute of Health. -- Science News Letter (Apr. 19, 1947)

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- 495 Benzene (Benzol). Controlling Chemical Hazards, Series No. 6, U.S. Dept. of Labor, Div. of Labor Standards. 24 pp. (1946). Price 10 cents from Supt. of Documents, Washington 25, D.C. (A limited number may be obtained free from above Division, Clara M. Beyer, Asst. Director, Washington 25, D.C.)
- First is a chart pointing out fire hazards, storage requirements, fire fighting phases, and cautions for transporting and handling benzene. Precautions to be observed in handling drums, bottles, and tank trucks, grounding to prevent ignition of static electricity, specifications for explosion-proof equipment, and safe operation of enclosed and partially enclosed systems are described. Personal protection includes respiratory protective equipment, protective clothing, thorough cleaning and purging of tanks, exhaust ventilation, testing for vapor concentration, and other precautions. Symptoms of acute and chronic poisoning and first aid measures are described. The American Standards Association recommends 100 ppm as the upper limit of allowable concentration, and an operating mean of 50 ppm is advised. A bibliography of source material is included.

- 496 Official Proceedings of the Sixteenth All Ohio Safety Congress, Columbus, Ohio, April 16-18, 1946. Industrial Commission of Ohio. 580 pp. (1946)
- Numerous papers dealing with a wide range of safety subjects were presented at this meeting. Industrial hygiene was the principal subject of the following: Methods and Equipment for Dust Control. H.O. Danz. pp. 36-41. A general paper covering the fundamentals of dust control. Personal Protective Equipment. G. Lascher. pp. 41-42. The movie "The Air We Breathe" was presented. Industrial Hygiene Developments Relating to Safety. T.F. Hatch. pp. 223-229. The objects of safety engineering and of industrial hygiene are the same, namely, to provide that workers will be subjected to a very minimum of hazard and of stress. The differences in their fields are: (1) safety deals with physical forces while industrial hygiene is concerned with chemical forces; (2) causal relations are much clearer in the field of accidents; (3) a time factor is always involved in occupational diseases, which is not true in accidents; and (4) proof of occupational disease is more complicated, and often more difficult, than proof of an accident. The four steps in the attack upon occupational diseases are then outlined: (1) initial studies of environmental conditions and correlation with medical findings; (2) assisting the plant engineer in development of control measures; (3) routine surveys to check control; and (4) correlation of the findings of the check survey with periodic medical examinations. It is pointed out that toxic materials are to be distinguished from those that have only a nuisance effect. The final remedy, usually ventilation, is an engineering problem. There are some regions of overlapping, and many for cooperation, in the two fields. Responsibility of Cleveland Industries Under the New Ohio Industrial Hygiene Code. H.G. Dyktor. pp. 229-234. The Ohio industrial code is explained and suggestions are given for compliance. The provisions are quite specific in regard to limits of toxic substances and use and care of respirators, but very general in matters of sanitation, etc. Therefore mere compliance with the letter of the code will not be sufficient. Exhaust ventilation will have to be carefully designed to meet the toxic limit requirements, even though details of construction are not specified. Competent specialists will be needed to carry out all the requirements of the code. Foundry Ventilation. J.M. Kane. pp. 346-353. Special exhaust equipment for various foundry operations are described, with explanation of the principles involved.

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- 497 Catalysis and Its Relation to Fire Extinction. A.S. Minton.
Quart. Inst. Fire Engrs., 6, 67-73 (1946)

A review. The combination of many inflammable vapors, including carbon monoxide with oxygen is promoted by the addition of small amounts of water. Traces of nitrous oxide materially assist in the spontaneous ignition of all inflammable air mixtures. Fireproofing paints and coatings probably owe their efficiencies to two effects, their action as diluents or inerts and as negative catalysts. — C.A.

- 498 Processes, Hazards and Protection Involved in the Manufacture of Spirituous Liquors. Research Report No. 5, National Board of Fire Underwriters, Committee on Fire Prevention and Engineering Standards. 60 pp. (1947) Obtainable on application to Nat. Board of Fire Underwriters, 85 John St., New York 7, N.Y.

The manufacture of the various distilled liquors is fully described, with statistics on production and storage. Since alcohol vapor is inflammable at the concentration in distilled liquors, that constitutes one source of fire. Another is the explosibility of the ground grain. Special precautions must be taken at the mills to avoid flames and static discharges. Most liquors require a long period of storage in charred wooden barrels. The possible leakage of alcohol and the use of the wooden barrels constitute a fire hazard, especially in "open rack" warehouses, where many tiers of barrels are in one open room, even though the frames are sometimes of steel. The floored rack construction with concrete floors and steel frames is much safer. Detailed suggestions and regulations are given for all stages of manufacture.

Miscellaneous

- 499 Preventive Medicine in Engineering Education.
G.W. Reid. Ind. Med., 16, 51-52 (Feb., 1947)

The author pleads for the introduction of the fundamentals of public health into all engineering courses, so as to remove the burden often borne by the sanitary engineer in correcting conditions which a little knowledge of prevention on the part of civil engineers, architects, chemical engineers or others could have prevented. All engineers should have a speaking knowledge of food and premise sanitation, water supply, sewage and waste disposal, and industrial hygiene. This material might be in the form of a descriptive course in the senior year, with a supplement of film strips and movies from the U.S. Public Health Service, or perhaps even a few lectures in one of the senior courses would be sufficient.

- 500 A Bibliography on Protective Respiratory Devices and the Physiology of Respiration Through Resistance and Masks. L. Silverman. Am. Ind. Hyg. Assoc. Quart., 7, 3-20 (Dec., 1946)

This extensive bibliography comprises over 600 references on the subject, under the general headings of: (1) physiological measurements

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and data on respiration in gas masks and on resistance to breathing; (2) related physiological material to breathing in gas masks; (3) physical and chemical data on gas masks and respirators; and (4) patents on gas mask, respirators, and valves. The key to abbreviations lists 244 journals.

- 501 Description of the Eickhoff-Schramdler-Longwall Coal-Cutting and Loading Machine. E.M. Arentzen. U.S. Bur. Mines, Inf. Circ. No. 7390. 5 pp. (Dec., 1946)

This information circular deals primarily with an engineering description of a type of longwall cutting machine developed by Eickhoff Maschinenfabrik, Bochum, Germany. The only sources of information are literature and drawings. After a full description, the author says in conclusion: "This type of machine could easily be manufactured in the United States if the coal-mining industry desires to experiment along this line, particularly on longwall work. However, the writer believes that a combination of the cutting elements of this machine with some type of well-known mechanical loader already used in this country, such as a light-crawler-type loader, would make a better combination and be more flexible than the arrangement of conveyors shown with the machine described."

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