

INDUSTRIAL HYGIENE DIGEST

Literature Abstracts

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

Industrial Health News



Issued Monthly By

INDUSTRIAL HYGIENE FOUNDATION

4400 FIFTH AVENUE

PITTSBURGH 13, PA.

004307

Industrial Hygiene Foundation assumes no responsibility for statements in articles abstracted in this Digest or for material from other organizations which may be sent to members from time to time. The Digest's condensates of articles, as well as literature not originating within the Foundation, are made available to our members solely for their information, by way of keeping them posted on developments.

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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.

Vol. 6

July, 1944

No. 7

Heavy Demand for Foundation Publications

The demand for Foundation publications has been mounting steadily this year. Circulation of the monthly INDUSTRIAL HYGIENE DIGEST has increased 22% since January 1st, 1944. Meanwhile, "Putting the Disabled Veteran Back to Work", requested in almost every mail, has achieved a greater circulation than any bulletin the Foundation has ever issued.

Also in great demand is "Health Problems of Women in Industry." In fact, the original printing is exhausted and the continued requests have necessitated a second printing, now in press. There are also numerous requests for the recent "Memos to Members" dealing with phases of veteran rehabilitation, and for the reprints from the Proceedings of the Eighth Annual Meeting which were listed in the April news letter, Foundation Facts.

Meeting of Legal Committee

The Foundation's Legal Committee, of which Mr. Theodore C. Waters is Chairman, met in New York recently. Plans were considered for the Committee's participation in the Ninth Annual Meeting of members which will be held at Mellon Institute, Pittsburgh, on November 15 and 16. Several presentations are being considered for the Legal Section of the program. Meanwhile, the Committee is at work on the new bulletin in the Legal Series which we hope to publish about the time of the November meeting.

Comment Re Plant Hygiene Surveys

A Factory manager of a large Mid-Western plant writes as follows:

"I have just had the pleasure of reading the Industrial Hygiene Survey Report made for our company by your organization. For the first time I feel assured of the dust conditions in our plant. The suggestions and recommendations will be acted upon.....We have held up certain phases of this work (control) awaiting your report which now gives us a point of departure. You are to be congratulated upon the two representatives sent here to conduct field work....."

Comment from the Marines

A high ranking officer of the U. S. Marine Corps writes regarding the publication, "Putting the Disabled Veteran Back to Work:"

"....It is a splendid document and contains so much excellent data and material that I should like to distribute it.....so that our officers.....may have the benefit of this fine bulletin."

New Subscribers: The following have recently subscribed to Foundation publications: Michigan Department of Health, Dr. R. T. Johnstone, Los Angeles, and Mr. A. C. Lewis, Ammanford, South Wales.

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Industrial Hygiene Foundation
4400 Fifth Avenue
Pittsburgh, Pa.

INDUSTRIAL HYGIENE DIGEST
Literature and News

News Items

- 774 Safety Equipment, Distribution in 1943 and Requirements in 1944.
The use of industrial safety equipment increased tremendously with the expansion of war production. The total number of respirators (mechanical-chemical and supplied-air types) purchased by the major consuming industries in 1943 was 1,055,340 mechanical and chemical, and 16,650 supplied air types, valued at \$2,051,000 and \$481,500 respectively. The iron and steel industry and chemical industry each account for 20% of the output and shipbuilding for 10%. However, in equipment per 1000 workers, the chemical industry is first with 215 (chemical and mechanical) respirators and railroad equipment second with 177. The estimate for 1944 is about 10% above the sales for 1943. -- Release from War Production Board, Safety and Technical Equipment Division, March 31, 1944.
- 775 Keeping the Worker on his Feet.
Description of a foot-care program instituted by one plant, giving data on the amount of care found necessary and the cost of employing a part-time podiatrist; also the measures which were taken to secure acceptance of the plan by the workers. -- F. Smith. Persommel, 20, 333-337 (May 1944)
- 776 Office of Defense Transportation.
Transportation preference and priorities for disabled military, naval and merchant marine personnel are provided to assist the nation's railroads in their plans for handling military casualties, in a certification and order announced June 23 by the Office of Defense Transportation and the Interstate Commerce Commission. The action provides for cancellation of reservations, space assignments or tickets and permits the railroads to require passengers to vacate space and accommodations when necessary to provide space for casualties. -- O.D.T. June 23, 1944, (OWI)
- 777 Militarily "Over-age" Physicians.
To meet needs of the Veterans Administration, the Procurement and Assignment Service of the War Manpower Commission announces that it is re-examining the classifications as to essentiality of physicians heretofore regarded as "over-age" by the armed services. Those who can be spared without detriment to the maintenance of community health will be declared available for military service and given an opportunity to apply for commissions with the understanding that they are to be assigned to the Veterans Administration. The Procurement and Assignment Service considers one physician to 1,500 population for the country at large as adequate. The Army now accepts for commissioning physicians up to the age of 63.

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The Navy has raised its age limit to 60. Physicians accepted under this program will be commissioned with the understanding that they are to accept duty with the Veterans Administration. Physical qualifications for this group have been relaxed by both branches of the service. -- W.M.C., June 13 (OWI)

778 Occupational Disease in Connecticut.

In April, 350 out of 352, and in May 256 out of 258 occupational disease cases reported by the Connecticut board of health were of dermatitis. Of the remaining cases, 2 were of electric ophthalmia, one of pneumoconiosis and one of lead poisoning. The most common sources of dermatitis were oils (mineral, paraffin, cutting and vegetable). -- Conn. Health Bull., May and June, 1944.

779 Proposed Transfer of Health Activities from Labor Department to U. S. Public Health Service.

On April 25 Congressman A. L. Miller of Nebraska introduced in Congress a bill to transfer to the Federal Security Administration and the Public Health Service those functions of the Secretary of Labor and the Children's Bureau of the Department of Labor which are concerned with health, including industrial hygiene. Dr. Miller, in introducing his bill, spoke unequivocally and forthrightly regarding the necessity for this legislation. Today the Labor Department includes the Division of Maternal and Child Health, a Division of Crippled Children and a Division of Industrial Health, all of which have been expanding their activities. Much of their work is being duplicated in the U.S. Public Health Service. -- Current Comment, J.A.M.A., 125, 150 (May 13, 1944).

780 Commissioner Corsi Establishes New Division and Program.

With the establishment of a Division of Industrial Safety, on May 5, Industrial Commissioner Corsi initiated the first of several major phases in his program of reorganizing the New York State Labor Department. With the establishment of this Division, and especially its Bureau of Safety Engineering, a new policy of relations between employers and the official State Labor agency is introduced, as its function is cooperative rather than punitive as was the preceding organization. A marked reduction in accidents is expected from the new policy. The new Division supplants the Division of Inspection and its Bureaus of Mercantile and Factory Inspection, now abolished. -- N.Y. State Ind. Bull., 23, 178 (May 1944)

781 Study Lead Poisoning Hazards in Structural Steel Work.

Field investigations and laboratory tests to determine lead poisoning hazards in structural steel operations and discover preventive measures have been begun by the New York State Labor Department, and progress is being made in the estimation of hazards in the demolition of steel structures in Brooklyn and at the ends of Brooklyn Bridge. The chief sources of lead fumes, according to union authorities, are in bolting, riveting and cutting of steel structures which were coated with lead paints, the first involving contact poisoning and the others producing lead fumes. In 1942 there were 24 compensated cases of lead poisoning in New York state, 17.6% of the total cases. New rules covering exposure to lead poisoning will eventually be added to the industrial code covering construction work. -- N. Y. State Ind. Bull., 23, 177 (May 1944)

782 Cadmium Fume Hazard in Plane and Ship Construction.

Tremendous expansion in plane and ship construction has given great impetus to the development and use of corrosion-resistant metal coatings for airplane and marine hardware and fittings. Among the protective coatings which are electro-deposited on base metal is cadmium plate. The appearance of cadmium plate and electrolytically-deposited zinc plate being similar, a worker frequently burns or welds cadmium plated articles under the impression that they are galvanized.

Since the accepted maximal permissible concentration of cadmium fumes is much lower than that for zinc oxide, and since in addition to the distress usually associated with metal fume fever, cadmium fumes produce severe systemic poisoning, this situation may lead to serious consequences. -- Ind. Hyg. News Letter, p. 7 (May 1944)

783 Fifty-ninth Annual Report of the Trudeau Sanatorium for the Year Ending Sept. 30, 1943.

This is a general report of the operation of the Trudeau Sanatorium for the year indicated, including number of patients treated, members of staff, bequests and donations and a detailed financial report. The session of the Trudeau School of Tuberculosis and the activities of the Trudeau Foundation are of particular interest.

784 Comprehensive Group Insurance Program.

A "model" group insurance plan has been approved by the board of directors of Continental Can Company, Inc. and was to go into effect June 10th, provided that 75 per cent of the company's eligible employees throughout the United States, Cuba and Canada had enrolled by that time. The revised plan not only doubles the amount of life insurance formerly made available to employees but also adds completely new protection to cover sickness and accidents, hospital confinement for both employees and dependents, and surgical operations for employees. The company will pay a large share of the new and increased benefits, and insured employees will pay small, fixed contributions each month. The plan provides death benefits roughly equivalent to one and one-half to two years' pay; weekly sickness and accident payments for as long as 13 weeks; hospital insurance for as long as 31 days, plus reimbursements for extra hospital charges; similar hospital benefits on a lesser scale for dependents; and defrayment, according to a fixed schedule, of operation costs resulting from non-occupational disabilities. -- Man. Rev., 33, 212 (June 1944)

785 Publications of the National Society for the Prevention of Blindness, Inc.

These include a Catalogue of Publications, issued in 1942, with leaflets which bring the list up to date, Manual and Appraisal Form on Conservation and Utilization of Eyesight in Industry and a 6 page pamphlet, titled "Eyesight in Industry." These publications may be obtained from the Society at 1790 Broadway, New York, N. Y.

786 Wartime Public Health Meetings.

The Executive Board of the American Public Health Association announces the Second Wartime Public Health Conference and the 73rd Annual Business Meeting in New York City, October 3, 4, and 5, 1944. Meetings of related organizations will take place on Monday, October 2nd. Headquarters will be the Hotel Pennsylvania. The 33rd National Safety Congress meets in Chicago on the same dates.

Legal Developments

787 Maryland Amends Regulations on Maximum Allowable Concentrations.

Effective April 27, the Maryland State Board of Health and the City of Baltimore made the following changes in their Regulation 2 specifying maximum concentrations of various air contaminants that may affect health. These items have been added: cadmium, 0.1 mg. per cubic meter; carbon disulphide, 20 p.p.m; ethylene

dichloride, 100 p.p.m; manganese, 6 mg. per cubic meter; mercury, 0.1 mg. per cubic meter; perchlorethylene, 200 p.p.m; trichloroethylene, 200 p.p.m. Modifications are made in previously named substances, as follows: Carbon tetrachloride, from 100 to 50 p.p.m; formaldehyde, from 20 to 10 p.p.m; chromic acid, 0.1 mg. per cubic meter, extended to include chromates as well as chromic acid. -- Balt. Health News, 21, (July 1944)

788 Labor Laws and Regulations Enacted August 1, 1942 to August 1, 1943.

Laws enacted in various States covering child labor, hours of work, wages, industrial relations, workmen's compensation and safety and health. -- U. S. Dept. of Labor - Div. of Labor Standards, Bulletin No. 63, (1944) 154.

789 Rules and Regulations Relating to Industrial Housekeeping and Sanitation, and Wash, Locker, Rest, Toilet and Lunch Room Requirements, Part C, of the State of Illinois.

In conformity with a policy of several years the Industrial Commission of this state is preparing to promulgate, as rules and regulations, a code compiled by the American Foundrymen's Association (reviewed in Abstract No. 676, June 1944, Industrial Hygiene Digest). While the code was written by the A.F.A. for the foundry industry, it will be applied to all factories and workshops of whatever nature, in the State of Illinois. Among detailed requirements are the following: (1) volume of workrooms 2000 cubic foot per worker and a minimum window area equal to 1/8 of floor area, (2) if window area is greater than above, room volume may be reduced in steps to 1000 cubic foot per worker, (3) if these minimum requirements are not met, then mechanical ventilation must be applied at a rate equal to (a) 2 c.f.m. per worker per 100 cubic foot of deficit in room volume or (b) 2.4 c.f.m. per worker per 1% of window area deficit - whichever is the greater. On a similar basis are specifications for ventilation of offices, toilets, rest rooms, locker rooms, kitchens, etc. Detailed specifications cover other phases, e.g. - drinking water supplies, toilet rooms, wash rooms, lockers, etc. and illumination and rest rooms for women. The Rules and Regulations follow the A.F.A. code almost verbatim, but where the A.F.A. code specifies 2-1/2 footcandles illumination for storage spaces and passageways, the Rules permit only 1-1/2 footcandles. Similarly, the requirements for rest rooms for women are modified to require less in the Rules than in the A.F.A. code. -- Mimeograph, 19 pp. (To become effective Sept. 1, 1944.)

790 Second-Injury Funds as Employment Aids to the Handicapped.

In states where second-injury funds are not available, employers hesitate to hire handicapped workers because in the event of a second injury, unimportant in itself, they may become liable for total disability. Second-injury funds are provided (as of Feb. 1, 1944) in 22 states. According to the usual plan, the employer at the time of the injury pays for only the injury occurring at his plant. The remainder of the total or more extensive disability is compensated from a fund which is collected in various ways in the different states. The cost of maintaining such a fund depends upon the scope and type of cases, the State benefit level, the administrative policy and other factors. The initial fund need not be large. Details of the operation of the New York special disability fund and the second-injury fund in Wisconsin are given, and examples of some second-injury fund provisions, especially in new legislation in Maine, Wisconsin and Minnesota. -- Division of Labor Standards - U. S. Dept. of Labor (1944) 12pp.

791 Compulsory Health Insurance Laws Introduced in Various States.

Attention is directed to surveys that indicate that the public favors health insurance. "Professional men must not treat lightly this popular support of health insurance". A list of compulsory health insurance laws in the United States is

presented, giving name and title of bill, sponsor, state, method of administration, who is covered by insurance, cost, cash benefits, benefits to insured and dependents, restrictions and waiting periods, and status of physician and dentist.
-- Tic, 413 North Pearl St., Albany, New York, pp. 2-7, (June 1944)

* * * * *

792 Unconstitutional Provision of Compensation Law.

Recently, in the case of Martin v. State of Louisiana, the Louisiana Supreme Court held that one section of Act No. 20 of 1914, being the Workmen's Compensation Law, was unconstitutional under both its Constitution of 1913 and its Constitution of 1921. The Constitution of 1913, which was in effect at the time the Workmen's Compensation Law was passed, contained a provision in its Article 192 that whenever the General Assembly authorized a suit against the State, the Act authorizing such suit should describe the procedure to be followed, as set out in said Article 192. Although the Workmen's Compensation Law incorporated a section providing for suit against the State, neither that section nor any other section nor amendment thereafter put into effect met the requirements of describing the proper procedure as constitutionally required. In 1921 Louisiana adopted a new Constitution, but this new Constitution also contained a provision in Article 3, Section 35, requiring that State laws, which provide for suits against the State, must incorporate the procedure and effect to be given judgments against the State into the terms of those laws as set forth in the Constitution. As the Workmen's Compensation Law did not contain the provisions as required by either Constitution, that section of the Law authorizing compensation claims against the State by State employees was declared unconstitutional. (CCH)

793 Accidental Injury Giving Rise to Disabling Skin Disease.

Claimant was struck in the back by a milk bottle containing an unknown liquid, which liquid spilled on his back when a fellow worker accidentally knocked the bottle from a shelf. The liquid, which caused a burning sensation when it came in contact with claimant's back and which burning sensation continued for the balance of the day, was wiped from his back with a rag. By evening a red spot had developed on claimant's back which developed into a skin irritation or infection and which became progressively worse. Within two weeks the condition caused disability to work and has involved claimant's entire body requiring constant hospitalization. There is no evidence to disprove claimant's contention that prior to the accident he was in good health, free from any skin disease, and had worked steadily. There is a further contention that the skin disease was aggravated by the administration of arsenic preparations given on a mistaken diagnosis of the condition. The testimony of fifteen physicians was sharply divided but an examination of the record indicated that the weight of the evidence established that claimant is totally and permanently disabled as the result of the accident/which arose out of and in the course of his employment. -- Fierro v. Public Service Coordinated Transport. New Jersey Supreme Court. No. 210, May Term 1944. May 25, 1944. (CCH)

794 Failure to Post Notice of Compliance with Compensation Act.

Section 51 of the Workmen's Compensation Act provides that an employer complying with the provisions of the Workmen's Compensation Act must post notices in conspicuous places at its place of business and in the form prescribed by the Commission, announcing to its employees that it has provided such compensation insurance for the benefit of its employees. Failure to post such notices is sufficient ground to regard the employer as not complying with the Workmen's Compensation Act. Where the employer has failed to produce copies of the notice which it claims it has posted and fails to state just where such notices have been posted, it has failed to meet its burden of proof that such notices have been posted. -- Vespa v. Herald Company. New York Supreme Court, Appellate Division, 4th Dept.

(CCH)

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795 Silicosis Hazard as Result of Employer's Negligence.

An employer appeals from an award to an employee under the Workmen's Occupational Diseases Act of Indiana and contends that there was no substantial evidence to support the charge of negligence and that certain evidence was erroneously admitted. However, there is evidence that various exhaust fans and safety measures were suggested to the employer upon various occasions but they were ignored because of the cost of installation. Further, there is evidence that the claimant had X-ray examinations made two years prior to his disability which revealed that he was suffering from silicosis and yet the employer, knowing this, permitted him to continue his employment until totally disabled because of the development of tuberculosis as a result of the silicosis. The evidence objected to as erroneously admitted was to the effect that claimant contracted his silico-tuberculosis while in the employ of the employer. Since the remainder of the record shows conclusively that the disease was contracted during his employment and since the only question to the jury was whether or not the disease was contracted as a result of the employer's negligence, the evidence complained of was not prejudicial since it could not have affected the result. -- Scroggs v. American Stove Co. United States Circuit Court of Appeals, Seventh Circuit. No. 8416. May 11, 1944. (CCH)

796 Comment on Weight of Evidence.

Where the trial court did not define the term "accidental injury," upon which ground claimant sought compensation for T.N.T. poisoning contracted in his employment, since occupational diseases are compensable in Texas only if they arose out of an accidental injury, and where appellant adduced competent medical testimony to the effect that T.N.T. poisoning may be contracted within a short time, the length of time depending upon the susceptibility of the patient, the trial court's definition of "occupational disease," stating "and must in the nature of things be the result of a slow and gradual development," was a comment on the weight of the evidence under the record presented, and placed a greater burden on the appellant than it was required to bear. -- American Surety Company of New York v. Ritchie. Texas Court of Civil Appeals, Tenth Supreme Judicial District. No. 2587. June 1, 1944. (CCH)

797 Industrial Accident v. Epileptic Seizure.

There was sufficient evidence to sustain a finding that an employee suffered from the effects of gas emitted from an engine which had been recently repaired and left running in the room where the employee fell from the top of a bin where he was sitting to watch the performance of the engine, from which fall he sustained a fractured skull and subsequent death. Although there was undisputed evidence that the employee had been periodically afflicted with epileptic seizures, there was testimony that the doors of the workroom where the motor was running were closed, that the motor gave off smoke and fumes, that such fumes frequently caused headaches, smarting of the eyes and a "dopey" feeling, that after the injury to decedent such tests on the operation of motors were made out-of-doors, that after his fall the employee was limp rather than rigid and that he possessed none of the tonic and clonic symptoms indicative of an epileptic seizure. -- Woodfill v. Lozier-Broderick & Gordon. Kansas Supreme Court. No. 36,145. June 10, 1944. (CCH)

798 Heat Stroke; Course of Employment.

A heat stroke, sustained by decedent while laying concrete gutters and curbs along an oiled surface street, which work required that he be in the sun most of the time, exposing him to a greater hazard because of the heat and increased humidity due to the oiled street and wet concrete than the general public was exposed to, is found to be an accident within the meaning of the Act, and ample evidence has been given to sustain the award of the Full Industrial Board granting appellee compensation for the death of her husband. L. W. Dailey Construction Co. v. Carpenter. Indiana Appellate Court. No. 17,208. March 3, 1944. (CCH)

799 Detached Retina Unrelated to Employment.

Where an employee had to jump from planes many times during his working day, a distance of about two feet, and upon one occasion injured his heel or ankle which he reported immediately to the first aid station, the record contains competent supportive evidence for the finding that there was no casual relation between that accident and a detached retina which was first discovered about nine days later. Although it is conceded that a detached retina might result from a lick or blow about the head and that it could possibly have resulted from the jumping, the facts that the employee did not complain of this ailment when he reported the injury to his ankle and made no report or complaint until nine days later, and that some medical experts testified that the jumping was not the cause, support the order denying compensation. -- Powers v. Consolidated Vultee Aircraft Corporation. Arizona Supreme Court. No. 4700. June 12, 1944. (CCH)

800 Exposure to Sun as Incident of Employment.

PER CURIAM: Appellant's complaint asked review of an award under the Workmen's Compensation Act. Grover Dulin died of a heat stroke suffered while he was on duty as an attendant at appellant's parking lot. Appellant carried no compensation insurance. At the hearing before the Deputy Commissioner he claimed that Dulin was his partner and introduced a purported partnership agreement. The Deputy Commissioner found that the alleged partnership was a mere device to evade the requirements of the compensation law, that Dulin was actually not a partner but an employee of appellant, and that the heat stroke arose out of and in the course of the employment. We think the court was right in dismissing the complaint. The evidence supports the Deputy Commissioner's findings. Appellant had formerly operated the parking lot as sole owner and had carried compensation insurance for his employees. He had complained of the cost of this insurance and sought advice on how to avoid it. Lease, occupancy permit, and insurance against fire and theft were all in his name alone, both before and after the making of the "partnership agreement." The agreement made no provision for distribution of profits. Appellant showed no concern for the financial responsibility of his associates. They performed menial tasks while he managed the business. The terms and form of the agreement are not conclusive. The heat stroke plainly arose out of the employment. "Although the risk may be common to all who are exposed to the sun's rays on a hot day, the question is whether the employment exposes the employee to the risk." Affirmed. -- Davison v. Cardillo. U. S. Court of Appeals, District of Columbia. No. 8654. June 19, 1944. (CCH)

801 Aggravating Cause of Blindness.

Where the record shows that claimant suffered from pyorrhea, infected tonsils and syphilis all of which might produce an eventual loss of sight, the fact that claimant's loss of sight in his only good eye occurred suddenly after about thirty minutes exposure to the glare from an acetylene torch, the flame varying from six to twelve inches in length and being close to claimant's eyes and face during the entire time, and his job being one that required good eyesight for the satisfactory type of work which he produced, the weight of the evidence preponderates in favor of the blindness having been caused, or at least aggravated, by the exposure to the blow torch in the course of his employment and the blindness is, therefore, compensable. -- Haden v. Maryland Casualty Company. Louisiana Court of Appeal, Second Circuit. No. 6684. Decided March 2, 1944; Rehearing denied March 30, 1944; Certiorari denied May 22, 1944. (CCH)

802 Hernia within Scope of Definition of "Accident".

The Workmen's Compensation Act defines an accident as "an unexpected or unforeseen event happening suddenly and violently, with or without human fault and producing at the time objective symptoms of an injury....." Where an employee sustained a hernia or rupture while attempting to change a tire in the course of his

employment, there was medical testimony that the strain or rupture produced objective symptoms. The fact was that the employee was unable to easily remove the lug, as he customarily was able to do, which held the tire in place, and had to exert a greater or unused force or strain by pulling, tugging and placing his foot on the tool he was using. He did not expect or intend that the greater force exerted would cause any strain or injury. Therefore, the receiving of the hernia in the course of his employment constituted an accident within the meaning of the Act. -- State of Missouri ex. rel. United Transports, Inc. v. Blair. Missouri Supreme Court. No. 38,421. June 5, 1944. (CCH)

803 Cook's Injury by Explosion of Fat.

Upon hiring claimant as a professional cook, the employer informed the cook to use the fats which the employer skimmed from its soups for all cooking and frying. Although the cook told the employer that she was not in the habit of using such fats, that does not place liability upon the employer to warn the cook of possible danger therefrom or to have the fats rendered before subjecting the cook to their use since the rule, that an employer must warn his employee of any dangers to which he will be exposed, is applicable only if the employer himself has or should have knowledge of such dangers, if the employee is ignorant thereof, and if they are not the subject of common knowledge or patent to a person of his apparent intelligence and experience. The employer was justified in assuming that claimant, as a professional cook, should have as much or more knowledge of the reaction of using cooking fats which contain more than one percent of water, as the employer herself. The alleged loss of sight and impaired vision as the result of hot grease splashing into the cook's face when it "exploded" is, therefore, not compensable. -- Faulks v. Fischer. Pennsylvania Supreme Court, Eastern District. No. 120, January Term, 1944. May 22, 1944. (CCH)

804 Prima Facie Jury Case; Statute of Limitation; Assumption of Risk.

Where the evidence shows that part of an employee's duties required his spending part of each working day in a sandhouse, which prepared sand for use in locomotives, and that silica dust was raised by the shovelling and drying processes, and there were no blowers or vents for removing the dust and the employee was not warned of the dust hazard nor furnished with a respirator or similar device as protection against the dust, the facts presented a prima facie case for a jury to determine whether or not such circumstances created negligence upon the part of the employer. Evidence that certain other railroads furnished no contrivances for the protection of employees engaged in similar work does not establish, as a matter of law, that protective devices were not required in the case at bar since each case must be determined upon its own peculiar circumstances. On August 11, 1939, the Federal Employers' Liability Act was amended to provide for a three-year period of limitation. Although claimant's silico-tuberculosis had occurred before the employee left the employment, he did not become disabled until his collapse on August 25, 1939. Therefore, the three-year statute of limitation applied. The defense of assumption of risk was abolished on August 11, 1939, also, and since it cannot be held as a matter of law that the injury occurred before that date, the defense is not applicable here. -- Sadowski v. Long Island Railroad Company. New York Court of Appeals. April 20, 1944. (CCH)

Book Reviews and Notices

- 805 Annual Report of the Union Health Center. International Ladies Garment Workers' Union, 1943. L. Price, Director. 105 pp.
The Union Health Center is unique in that it was conceived and operated by a

labor union. Its purposes are the same as other medical service plans operated by employers, management and other agencies. It provides medical care of a high quality at low cost to the workers. The report includes a description of the clinic, statistics on attendance (total - 45,607 persons in 1943), description of the sickness insurance program, morbidity tables, a special report on tuberculosis, a description of health program planning, a financial report, and a review of 31 years of progress of the Health Center.

- 806 Music in Industry. Industrial Recreation Association, 1 North LaSalle St., Chicago. 63 pp. Price \$1.00. (1944)
Two effective ways to use music for building and maintaining morale in industrial organizations are suggested by and discussed under the following headings: (1) How to Set up and Operate a Plant Broadcasting System, (2) How to Organize and Develop Employee Musical Activities. A bibliography is added.

Putting the Veteran Back to Work

- 807 Operations Manual for Placement of the Physically Handicapped. U. S. Civil Service Commission. Second Edition, July 1943. 276 pp.
This extensive classification is the result of a study made by the Commission in cooperation with industrial safety men, medical advisers and others. First a job analysis form used in studying each position includes: (1) functional factors of the position; (2) environmental factors of the position; and (3) the resume or recommendations of the medical officer making the survey as to minimum physical requirements necessary to perform the duties of the position. Supplementary information is also obtained. Then code numbers for government establishments, and other code numbers for particular disabilities, are tabulated. The first 48 pages give a table of governmental industries with disability placement codes for each. A list of positions suitable for persons with each form of handicap fills the next 145 pages. The remainder gives the "addendum sentences" or additional remarks on placing persons according to the other tables.
- 808 Principles of Exercise Therapy. E. A. Nicoll. Brit. Med. J., 1, 747-750, (June 19, 1943)
Remedial exercises, long recognized as the basis of functional recovery in injuries of the locomotor system, are now considered of value in the restoration of working capacity following a long and serious illness. The principles of exercise treatment are discussed and reasons for failures in some instances are pointed out. Occupational therapy and recreational therapy are valuable alternatives to exercises. -- Bull. War. Med.
- 809 U. S. Senate Hearings on War-Time Health and Education. N. Y. Times, July 11, 12, 1944
The grave condition of the country's health, as disclosed by examinations for selective service, were brought out at hearings July 9-11 before the Senate Sub-committee on Wartime Health and Education (Senator Claude Pepper, Chairman.) The evidence revealed that as many as one-third of the young men examined for service proved to have mental or physical defects. General L. H. Hershey said, "I know of nothing that represents so much potential danger as the accelerated growth of mental disease. Out of 4,000,000 disqualified, over 1,000,000 were

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rejected because they were found mentally unfit." Colonel W. C. Menninger, director of neuropsychiatry activities of the Army Medical Corp and Commander F. J. Braceland of the Navy's division of neuropsychiatry urged study of mental diseases by all members of the medical profession, pointing out that most of the men discharged for mental reasons were curable and capable of being readjusted to civilian life. Both officers urged that an employer should not refuse to return a job to a man who had been discharged for mental trouble, but advised that he should rather go back to the man's pre-war record to determine his capacities under normal conditions. Colonel Menninger said he was opposed to granting pensions to men discharged for mental troubles because such men were rather in need of guidance and training and that a permanent pension would destroy his responsibility and interfere with his recovery.

- 810 Putting the Disabled Veteran Back to Work. J. F. McMahon. The Crippled Child, 22, 2-3, 24 (June 1944)

The author quotes significant paragraphs from addresses given at the last meeting of the Foundation by the panel of authorities showing the capability of disabled workers, methods of making a survey of available jobs for handicapped workers, with a suggested form, provisions in the Selective Training and Service Act, and the caution that disabled veterans must be treated as normal persons. Employers may submit questions to the panel through the Foundation.

- 811 Steel Producers Begin Active Preparation for Re-employment and Industrial Rehabilitation of Returned Service People. T. E. Lloyd. Iron Age, 153, 113-115 (June 15, 1944)

The part of the government, the CIO and a few steel companies in recent progress in preparation for reemployment is outlined briefly. Shortcomings of the Service Act in not providing more details are pointed out. Progress made by several steel companies is described. For instance, Pittsburgh Steel Company has reemployed every one of its former employees that sought employment after discharge, and some additional discharged men have been hired. Fourteen practical suggestions are presented.

- 812 Postwar Manpower Problems. M. S. Viteles. Edison Elec. Inst. Bull., 12, 15 (January 1944)

The responsibility of the employer in establishing plans in their own organizations, now, for postwar employment is considerable, for in this way, "basic manpower problems of the postwar era can be largely solved without extended intervention of complex organizations and meddlesome bureaucracies, which frequently serve to confuse rather than resolve problems." It is estimated that the reshuffling of approximately 30 million jobs will be involved. Disabled veterans are already returning in small numbers. Classification of men returning from military service and general steps which may be taken by any company in preparing in advance for their placement are outlined.

- 813 The Able Disabled. C. E. D. News Supp; Machinery, (April 1944)

Henry Ford's rehabilitation program for disabled war veterans is based on 20 years' experience finding that a handicapped person can work just as well, given the right job, as a man with eyes, hands and feet. Mr. Ford has opened a 500-acre Camp Legion in Dearborn, Mich. All veterans who have a medical discharge and are disabled are eligible for entrance. It is for those who wish particularly to return to industry or to farming, and opportunity is given the veteran to work in the camp's fields or in the machine shops. Classes in supplementary subjects are also available.

- 814 A Plan to Help You Employ Disabled Veterans and Other Handicapped Persons Productively and Safely. Employers Mutual Liability Insurance Co. of Wisconsin. 22 pp. 1944.

The plan consists of the following steps: (1) learn the medical facts; (2) analyze your jobs; (3) match the man and the job; (4) introduce man to job; and (5) plan for follow-up. The introduction points out that most persons with handicaps are capable of performing many types of productive work but that careful examination and selection are necessary; also that there is no increase in premium rates when such people are employed. A simplified code to be used by the examining physician in stating handicaps is recommended, and a brief classification of handicaps is given. The importance of the employee's mental attitude is stressed. A form for job analysis is suggested, with suggestions on matching the man to the job. Tact should be used in introducing the man to the job; his abilities and handicaps should be discussed with the foreman previously rather than at the time of introduction. A handicapped person should be offered the same privileges as other employees and should be encouraged to take advantage of all training and upgrading facilities available. A transfer of employment should not be made without being sure that the change will not be detrimental to the employee. A community placement organization, such as in the "Peoria Plan" is very helpful.

- 815 I. Getting Back to Civilian Life. II. Your Rights and Benefits as a Veteran. Reprinted from the January and February 1944 issues of the Bureau of Naval Personnel Information Bulletin. 15 pp.

The first article states the problems involved in the demobilization of Navy personnel. There are indications that the solutions are on the way and will be ready in good time. The second article of the series discusses the benefits which are now available to demobilized personnel, including mustering out payment, employment rights, vocational rehabilitation, disability pensions and insurance continuation. Financial Aid which may be claimed by families of personnel killed in war is explained.

Industrial Health Hazards and Their Effects

- 816 The Treatment of Silicosis by Aluminum Powder. D. W. Crombie, J. L. Blaisdell and G. MacPherson. Can. Med. Assoc. J., 50, 318-328 (1944)

This is the complete report to date of the scientific investigations of the Canadians on aluminum therapy. Because of the interest of many of our members in this subject, a copy of the reprint accompanies this Digest. The general conclusion from the investigation is that daily inhalation of aluminum powder by silicotics for 200 to 300 days, 5 to 30 minutes per day, is entirely harmless, and 19 out of 34 cases showed improvement. The authors warn that "aluminum dust cannot be regarded in any sense as a 'cure' for silicosis in so far as restoring to normal lung tissue which has already undergone fibrotic change is concerned. Its use, however, would appear to be followed by beneficial results in a significant proportion of cases, chiefly in the amelioration of symptoms and in the increased capacity to work. In view of these findings and the experimental work of Denny, Robson and Irwin, we believe the inhalation of finely particulate aluminum powder offers every prospect of preventing the development of human silicosis."

- 817 The Story of D.D.T. Victor Froelicher. Soap and Sanitary Chemicals, 20, 115 (July 1944)

This is the story of the wonder insecticide which was used to check the typhus plague in Italy. Dichloro-diphenyl-trichloroethane (D.D.T.) is a white powder

with a faint fruity odor which is practically insoluble in water. It is however very soluble in cyclohexanone, benzene, toluene and xylene as well as petroleum oils and solvents. D.D.T. is effective in killing flies, beetles, roaches, ants, fleas, chiggers, bedbugs, and moths. It produces a slow knockdown and a sure kill, being both a contact and a stomach poison. D.D.T. is effective after one application for periods of time up to several months. The toxicity of D.D.T. to man is being studied by the U. S. Public Health Service and by the Kettering Laboratory at the University of Cincinnati. Some data obtained by Swiss authorities indicates that between 5 and 7-1/2 grams of D.D.T. cause no toxic symptoms if taken by mouth. Some American data tends to confirm this claim but the only proven fact is that the dry powder is not absorbed through the skin and is non-irritating. Millions of men and women have been treated with a 10 per cent louse powder without any known cases of harm. The L.D. 50 by mouth in rats is 0.25 grams per kilogram when dissolved in olive oil and 2.1 grams per kilogram if suspended in milk. No one today can say what this data indicates regarding the toxicity to man. Mice are affected by the inhalation of a five per cent D.D.T. dust, but guinea pigs, rabbits and cats show no reaction. Caution is advised in the use of this new product until it may be thoroughly tested. This is advisable as it has been reported that D.D.T. is definitely toxic if taken by mouth. There seems to be little hope that the product will be available commercially or agriculturally during 1944.

- 818 Chemical Poisoning in Shipyards. Monthly Labor Rev., 761-762 (April 1944)
In the first 9 months of 1943, the shipyards reporting to the U. S. Navy - U. S. Maritime Commission Health and Safety Program reported 495 disabling cases of poisoning or occupational disease, as compared with 41,179 work accidents resulting in disabling traumatic injuries. For every disabling case of industrial poisoning there are about 3 which are not disabling. Of the number of the poisoning cases, 203 were cases of metal-fume fever, 194 cases resulting from the inhalation of fumes, smoke or dusts, and 98 of dermatosis. Supervisors are generally aware of the danger of metal fume fever and other hazards, but do not know much about proper preventive means. Some cases of poisoning arose from wartime substitutes, the hazardous nature of which was not understood.
- 819 Fluorescent Minerals Used in Lighting and Elsewhere. O. C. Ralston and A. G. Stern. U. S. Bureau of Mines, Information Circular 7276, 18 pp. (April 1944)
Minerals play an important part in fluorescent lighting, but their purity must be so great that in almost every instance synthetic minerals must be used. Those that seem to be most useful for fluorescent use are silicate, sulfide, tungstate compounds of zinc, beryllium and cadmium. A manganese compound usually is present as an activator. Not only are these minerals used in fluorescent tubes for converting ultraviolet light and X-rays into visible illumination but also to make screens that will convert the energy waves into visible light, and also for the identification of minerals by studying their fluorescent characteristics. -- Author's summary.
- 820 The Incidence of Tetrvl Dermatitis or C. E. Rash: A Review of Investigations Carried out in Australian Fuse-Filling Factories. H. M. L. Murray, R. W. Brunster and R. D. Anderson. Med. J. of Australia, 1, 104-106 (Feb. 5, 1944)
A review is given of the results of the statistical analysis of data dealing with the incidence of Composition exploding (totryl) rash in Australian fuse-filling factories. The rash is associated almost entirely with those tasks which require actual handling of the explosive. Protective measures should be taken to reduce the intensity of contact. A gradual exposure to contact with tetryl is recommended to build up resistance and decrease the severity of the rash. New operatives should be employed during the months when the incidence is at a minimum. -- Author's summary.

- 821 The Tanner's Hands. W. Schweisheimer. Hide and Leather Shoes, 107, 26 (A brief discussion of the prevalence, cause and treatment of the various tions common to the hands of tannery workmen. Included are stains, callosities, chrome sores, carbuncles, and anthrax.
- 822 The Chemistry of the Wetting Agents. G. E. Morris. J. Ind. Hyg. & Tox., 175-178 (May 1944)
The basic chemistry of some of the wetting agents is described. A brief of the chemistry of soap is given and the soaps and wetting agents are compared from a chemical standpoint. -- Author's summary.
- 823 Safety in Electric and Gas Welding and Cutting Operations. American War Relocation Authority, Z49.1 - 1944; American Standards Association, Approved May 9, 1944. Price 40¢.
A concise and invaluable booklet setting forth in code form all safety precautions that should be met in this activity for preventing injury to workers, for protection to property in the installation, operation and maintenance of electric and gas welding and cutting equipment. It is regrettable that attention on ventilation has been made unnecessarily complicated by attempting to relate the standards for local exhaust, to the volume of the room, requiring a minimum of 200 c.f.m. for local exhaust in very large rooms, 225 c.f.m. for smaller spaces and 250 c.f.m. for those under 5000 cubic feet. The booklet also permits general ventilation of 1200 c.f.m. in the smaller spaces for iron and 10% more for galvanized iron, brass or bronze. Everyone concerned with safety and health in any phase of this subject should have this pamphlet.
- 824 Health Hazards Associated with Welding. F. W. Hutchinson. Heat. & Vent., 73-77 (May 1944)
Health hazards associated with welding arise from the heat of the arc, the light emitted by the arc, and from gases, fumes, and dust which are by-product of the welding process. The literature contains many references to systemic diseases attributed to welding but as yet there is no positive evidence that such diseases represent a widespread hazard. Recognized danger does exist, however, in prolonged exposure to welding gases and fumes liberated in a confined space. To eliminate the hazard it is suggested that the control be provided to reduce the overall fume concentration below a limiting value of 30 milligrams per cubic meter. This can be done by dilution (controlled air volume) or by use of a local exhaust system (controlled air velocity in region of fume origin). No appreciable fume hazard will exist in any space where the concentration is so low as not to appreciably reduce visibility. -- Author's conclusion.
- 825 Fire Retardant Treatment for Fabrics. Industrial Data Sheet No. D.T. 2. Safety Council. Nat. Safety News, 50, 31 (July 1944)
"Fireproofing" fabrics by chemical means is actually only making them fire retardant, and protects only from light sparks, small flames or temperatures up to 400-500° F, and for many purposes such "fireproofed" material is preferable to asbestos or leather. There are two types of fire-retardant treatment: (a) soluble and (b) weather-resistant or water insoluble. The materials for water-soluble treatment are inexpensive, easily obtained and easily applied. The treatment must be repeated after laundering. Several frequently used treatments are listed with properties of each, including flame resistance, afterglow, charring, corrosion of metal parts, and durability, strength and flexibility of the treated fabric. The water-insoluble treatments are less used, but are more effective for particular types of garments or other material. Most effective results are obtained with mixtures of chlorinated hydrocarbons and inorganic salts. The chlorinated hydrocarbons liberate hydrogen chloride, not in sufficient quantities to be toxic but sufficient to blanket the flame. Stand-

is also effective against weather and fire, but does not impart resistance to afterglow. Suppliers of treated fabrics or treating compounds should be asked to submit specifications as to the flame-retardant and water resistant qualities of his product. Users of fabrics should also apply the approved test, which is given briefly in the Data Sheet and fully in the National Fireproofing Association publications.

- 826 Flammability Limits in Air - Methyl Chloride and Mixtures of Methyl Chloride With Dichlorodifluoromethane. H. K. Willson and W. O. Walker. Ind. and Eng. Chem., 36, 466-468 (May 1944)

Current shortages of dichlorodifluoromethane (Freon 12) and the advantageous solvent and other properties of methyl chloride have led to the consideration of methyl chloride-dichlorodifluoromethane mixtures where dichlorodifluoromethane had previously been used alone. Flammability limits in air of such mixtures are important and were determined. The effects of the type of ignition on these mixtures and on pure methyl chloride were studied.

- 827 Investigation of a Death by Asphyxiation in a Grain-Elevator Bin Containing Flaxseed. H. A. Lillevik and W. F. Geddes. Cereal Chem., 20, 318-328 (1943)

An elevator employee was asphyxiated after 10 minutes in a closed grain elevator nearly filled with flaxseed. Bacteria and saprophytic fungi present in abundance increased the respiratory activity of the grain to the extent that the atmosphere contained only 1.8% oxygen, 11.1% carbon dioxide immediately above the flaxseed. Traces of carbon monoxide were present but no hydrogen cyanide. -- C.A.

- 828 Gastric Cancer Produced by Coffee. A. H. Roffo. Bol. Inst. Med. Exptl. Estud. Cancer., 20, 425-470 (1943) Spanish.

Tar extracted from coffee beans has strong carcinogenic properties. It is resinous and intensely alkaline. 100 white rats were fed on a stock diet of bread, milk and grain, to which was added coffee tar in nontoxic doses. Pathologic changes in the digestive tract, particularly in the region of the stomach and malpighian mucosa developed after from 30 to 795 days. These consisted of lesions, beginning with simple ulceration and terminating in cancer. This evolution took 1-2 years. Coffee tar resembles tobacco tar in the carcinogenic properties of its hydrocarbons. Roffo believes that the roasting of coffee produces these carcinogenic hydrocarbons. However, spectrographic examination of coffee used as a beverage has shown that practically no hydrocarbons are present, since the latter are insoluble in water. -- C.A.

- 829 Protection of the Liver from Toxic Damage. B. N. Craver. Modern Hospital, 62, 94-98 (May 1944)

A summary of present knowledge on treating hepatic disease or of preventing its development by dietary measures. The caloric intake must be adequate and should consist of about 75 per cent carbohydrate, about 20 per cent protein and the other 5 per cent fat. In the case of patients being prepared for surgery 3000 calories should be taken, tube feeding being employed if necessary. Liver is the best source of protein, and animal proteins, in general, are better than vegetable proteins. Supplementary amounts of the vitamin B complex to the extent of from 1 to 2 ounces of brewers yeast per day and of vitamin C to the extent of 100 mgs. per day in divided doses should be given the patient. Iron should be given to combat anemia and, if anemia is attended by severe hepatic damage, liver extracts should be injected. In case of pernicious anemia, liver must be taken throughout the patient's life. A case is described in which a patient who had suffered hepatic poisoning from the ingestion of carbon tetrachloride was successfully treated by the use of methionine.

- 830 Fungous Infections of the Foot. M. R. Caro. J.A.M.A., 124, 751-756 (March 19, 1944)

Accompanied by photographs, this article occupies itself with the clinical picture, the diagnosis and treatment of superficial and deep mycosis of the feet. The rapid transportation and the worldwide movements of great masses of men inevitably results in wider distribution of fungous infections. Forms of superficial mycosis which are considered are dermatophytosis and moniliasis. Under the heading of deep mycosis the article reviews mycetoma, sporotrichosis, blastomycosis, and chromoblastomycosis. In general the treatment of granulomatous lesions is by means of potassium iodide. -- J.I.H. & T.

- 831 Chloracne (Cable Rash) T. P. Connelly and W. C. Marsh. U. S. Navy Med. Bull., 42, 405-406 (1944)

Characteristics distinguishing chloracne from acne vulgaris are, a formula for a zinc oxide ointment and brief directions for treatment. Preventive procedures are stressed, including (1) exhaust ventilation; (2) application of protective ointment; (3) separate lockers for work and street clothes; (4) shower baths after work; and (5) use of a special cleansing soap. Work involving use of chlorinated compounds should be done by older persons, and contact with the compounds should be avoided as far as possible.

- 832 Pertinent Factors of Industrial Dermatoses. Anon. What's New in Industrial Hygiene, 2, 7-12. Illinois Division of Industrial Hygiene. (April 1944)

A review which includes some formulas recommended by Schwartz for industrial skin cleanser and for protective ointments.

- 833 Generalized Skin Sensitization from Topical Contact. Queries and Minor Notes, J.A.M.A., 125, 390 (June 3, 1944)

Delayed reactions appearing several days after application of a sensitizer are fairly frequent. Several such cases are mentioned in the query and reply. The suggested explanation is that some of the antigen applied to the skin becomes fixed by the cells. After an incubation period in previously unsensitized persons the titer of antibodies may reach a sufficient concentration to react with uneliminated fixed antigen. This possibility is analogous to the delayed reaction in serum sickness which follows a primary dose of the serum.

- 834 The Prevention of Occupational Dermatitis. L. Schwartz. Soap and Sanitary Chemicals, 20, 31-33, 74 (June 1944)

A statement of principles in the prevention of industrial dermatitis and dermatitis among the consumers from manufactured goods. The public should be educated to demand information as to the toxic and skin irritating properties of the materials which they buy and to demand that this be printed on packages containing them together with methods for safe usage.

- 835 Failure of the Sweat Mechanism in the Desert. F. G. Novy, Jr. and J. H. Ramsey. J.A.M.A., 125, 738 (July 8, 1944)

A comment on the article of this title by Wolkin, Goodman and Kelley. (See May 1944 issue, #572). Two men, subjected to the hot highly humid climate of the South Pacific, presented the same syndrome as the patients in the desert climate. The writers conclude that only the high temperature plus some unexplained failure of the sweat mechanism are the principal factors in causing this form of anhydrosis. They believe that more of these cases will be seen as more troops are exposed to high temperatures and that further investigation as to the cause of this ailment should be carried out. The only apparent treatment is removal to a cooler climate.

- 836 The Problem of Industrial Noise. P. E. Sabine. Am. J. Pub. Health, 34, 265-270 (March 1944)

Occupational deafness is the most spectacular and widely recognized type of injury resulting from extreme noise. Less obvious but not less serious is the nervous fatigue which noise induces. Consideration of the noise problem has come about as the result of the war demand for increased production and the influx of women into heavy industries. Two elements, partly psychological and partly objective, which contribute to the noisiness of a worker's environment, are reverberation from reflecting surfaces and the "spreading effect" of sound. These may both be reduced by replacing the reflecting surfaces by absorbing surfaces. Effective shock mounting of heavy machines will reduce building vibrations in steel and concrete structures. Measures to protect workers from noise are: (1) the employment of men rather than women where noise is excessive; (2) allowance of frequent rest periods; (3) provision of simple ear defenders where needed; (4) recognition that noise makes labor more exhausting. The only effective remedy is to get people to make less noise. -- J.I.H. & T.

- 837 Industrial Poisons. D. Hunter. Quart. J. Med., 12, 185 (October 1943)
A general review with a bibliography of six pages.

- 838 Ammonium Nitrate Hazards in Handling as a Fertilizer. R. O. E. Davis. Chem. Met. Eng., 101 (April 1944) (From a report by Agricultural Research Administration.)

Ammonium nitrate is explosive and supports combustion, but no violent reactions need be anticipated from impacts, jars or friction. Some ordinary cautions that should be practiced are: (1) Storing in a dry, preferably fireproof location, away from combustible material; (2) Use of laminated, waterproofed bags for packaging; (3) Avoidance of bulk storage, which may result in caking; (4) Burning of used paper bags and thorough washing of fabric ones. Commercial fertilizer mixtures containing ammonium nitrate require no special precautions. It requires the presence of over 50 per cent of ammonium nitrate mixed with ammonium sulfate to make the mixture explosive under violent shock tests. In case of fire, water is effective. No noxious gases will be created. Fumes from burning ammonium nitrate should not be inhaled.

- 839 Cadmium Poisoning. P. Ross. Brit. Med. J., 1, 252-253 (Feb. 19, 1944)

Finely divided cadmium, of a particulate size of 10 microns or less, is inflammable, producing in the presence of abundant oxygen dangerous fumes of cadmium oxide. Further, cadmium in a finely divided state is a powerful irritant poison. An accident is described where, while cleaning out a cadmium-recovery chamber, red-hot ash from a cigarette (smoking was against the rules) ignited cadmium dust on the floor. The dust began to glow and soon became a red-hot mass emitting yellowish-brown smoke of cadmium oxide. The fumes affected 23 persons, especially those concerned in putting out the conflagration. No one at first recognized the poisonous nature of the fumes. Their action, after initial irritation, was delayed, similar to phosgene. Some three hours later, nausea and epigastric pain developed, with precordial constriction, dyspnea and prostration. Fourteen of the cases experienced ague, suggestive of metal-fume fever. No fatality occurred. Details are given of one fairly severe case which could not return to work for 2 months after being in hospital for a fortnight. In the case of such accidental fires, all firemen should wear suitable respirators. The need for exhaust ventilation to protect the workers from cadmium dust and fumes is obvious. -- J.I.H.&T.

- 840 Studies in the Deposition of Lead in Bone. II. Calcium-Phosphorus and Lead-Phosphorus Ratios. F. R. Barrett. Med. J. Australia, 2, 433-435 (Nov. 27, 1943)
(1) Data of the influence of calcium-phosphorus and lead-phosphorus ratios on the biochemical behaviour of lead in laboratory animals have been correlated.

The contradictory evidence can be reconciled by postulating the following: (a) a lead-phosphorus-vitamin D system restricted to the intestine and operating when the diet contains a small amount of lead; (b) the influence of the calcium-phosphorus-vitamin D system. The disturbance in lead metabolism is ancillary to that in calcium and phosphorus metabolism. (2) From the point of view of practical nutrition, therefore, lead-phosphorus ratios appear to be of secondary importance. A high calcium-phosphorus ratio, as well as the calcium level of the diet, affects lead deposition in the young rat. Of the lead absorbed, less lead is deposited when the calcium-phosphorus ratio is high, when the influence of vitamin D or phosphorus on lead metabolism is secondary to the correction of the calcium-phosphorus ratio. -- Author's summary.

- 841 Health Hazards in Soldering Operations. III. Hand Soldering - Scrupulous House-keeping and Local Exhaust Are Necessary Control Measures. Illinois Ind. Hyg. Div., Illinois Lab. Bull., 4, 4-5 (Jan. 31, 1944)

The potential hazards for cadmium and fluorides in silver-soldering deserves further study because of the increasing use of silver-soldering in industry. Chief sources of lead hazard are locations where the formation of powdery drosses is favored, particularly the new high-lead solders because of the higher working temperatures and use of supplementary open flames. More information is needed about the irritating and toxic components of fluxes, but it is apparent that the presence of chloride increases the hazard. Air samples indicate that the only reliable control is a combination of scrupulous housekeeping and properly designed local exhaust. A type of soldering booth is illustrated which embodies these requirements. -- J.I.H. & T.

Ed. Note: Most authorities do not consider lead poisoning to be an important hazard in soldering with irons.

- 842 Contamination of Beverages and Food with Lead. Queries and Minor Notes. J.A.M.A., 125, 684 (July 1, 1944)

Reports of cases of lead poisoning from contamination of food by containers such as pewter are comparatively rare, due to the fact that contaminations are small and spotty except in the case of certain community sources of water supply. Milk and many other foods take up lead from containers that are soldered on the inside and from utensils coated with tin-lead alloys. Skillets coated with tin-lead alloys are a source of contamination, but the coating tends to be melted off soon and a film is formed, which reduces the contact with the food. Lead glazed containers may contaminate food and beverages that have solvent properties. Old pewter of high lead content is generally unsatisfactory as a container for beverages, especially those with a high acid content, although a resistant coating may form here, also, unless abrasive cleaners are used. Modern pewter has a lower lead content, usually. The important consideration in the problem is the regular daily dosage of lead in the food and beverages from all sources. An excess much above 0.5 mg. of lead over any considerable period of time (months), in the case of adults, constitutes a potential hazard. The amount is somewhat lower for children. Poisoning does not result from occasional ingestion of larger amounts nor from regular ingestion of from 0.2 to 0.3 mg. a day in the food and drink.

- 843 The Possible Toxicity of Lead Alloys. IV. Studies of the Possible Toxicity of Two-Tin-Low and One-Tin-Free Substitute Solders. K. Salomon and G. R. Cowgill. J. Ind. Hyg. & Tox., 26, 162-163 (May 1944)

(1) Young rats were used in a study of the possible toxicity of two-tin-low (I-lead 93 per cent, tin 5 per cent; II-lead 95 per cent, tin 2.5 per cent, silver 2.5 per cent) and one-tin-free (III-97.43 per cent lead, 2.5 per cent silver) solders. (2) These rats, receiving 300 parts of lead per million of diet in the form of the respective solder pellets, proved to be similar to the

control group fed an identical amount of the same basal diet without added lead, with respect to growth, concentration of blood hemoglobin, the appearance of stippled erythrocytes, and the amount of lead stored in their carcasses. (3) Rats fed an identical amount of the basal diet to which had been added 300 parts per million of lead in the form of the soluble lead acetate exhibited all the signs of lead poisoning mentioned above; their carcasses contained large amounts of lead. (4) Although the lead in the solders tested in this study was absorbed to a degree higher than that of the solders studied previously, the actual amounts absorbed proved to be very small. It is concluded, therefore, that ingested solders of the compositions studied as a source of lead are nontoxic for the young rat under these experimental conditions. -- Author's summary.

- 844 Study of Poisoning and Fire Hazards of Butanone and Acetone. A. R. Smith and M. R. Mayers. N. Y. State Ind. Bull., 23, 174-176 (May 1944)

Evidence from several cases of workers in a raincoat factory indicates an acutely toxic effect from a combination of acetone and butanone (methyl ethyl ketone) which together reached approximately 1,000 p.p.m. Evidence is also presented of low grade intoxication and dermatitis from exposure to butanone alone in concentrations ranging from 300-600 p.p.m. No authoritative standards for safe concentrations of butanone have been published, but suggested standards range from 200 to 1,500 p.p.m. It is possible that the combination of the two vapors may be more toxic than either one alone in equal concentrations, as is true with some other vapors. The inflammability of these solvents at room temperature suggests extreme caution in their use. Concentrations of these solvent vapors, sufficiently low to protect the health of workers, will automatically provide safe concentrations from the fire and explosion standpoint.

- 845 The Physiological Principles Governing the Action of Acetone Together with Determination of Toxicity. H. W. Haggard, L. A. Greenberg and J. McC. Turner. J. Ind. Hyg. & Tox., 26, 133-151 (May 1944)

One of the basic needs in the toxicology of any volatile substance is a comprehensive knowledge of the physico-chemical relations between the substance and the living body, so that the concentration of the substance in the air can be translated mathematically into amounts and concentrations in which the substance exerts its action in the body. The primary features in these physico-chemical relations are: (1) the fate of the substance in the body, whether or not metabolized, and if so, the rate of change and action of the products formed; (2) the distribution of the substance between air inhaled and blood in the lungs; (3) the distribution of the substances between blood and tissues and; (4) the principles governing their passage through the kidneys. The authors have made a thorough study of acetone in all these physico-chemical relations by means of animal experiments supplemented by tests on persons. The mathematical treatment and results are presented in a number of tables and charts. It is shown that an exposure of 5.0 mg. per l. with constant exertion for 8 hours daily would lead to a blood concentration of 400 mg. per l., a quantity one-third of the lowest which causes mild intoxication in rats. For a subject at rest, about 200 mg. per l. blood would be the maximum, and human experiments showed no effect from that amount. With concentrations above 0.5 mg. per l. air the blood would not be free of acetone over the entire week, but such concentrations are much below the lowest causing intoxication.

- 846 Toxicity and Potential Dangers of Penta-Erythritol-Tetranitrate (PETN). W. F. von Ottingen and others. Pub. Health Bull. No. 282, U. S. Public Health Service. 39 pp. 1944. (Price 10¢ on application to Supt. of Documents, U. S. Gov't. Printing Office, Washington 25, D. C.)

Penta-erythritol-tetranitrate, generally known as PETN, is extensively used as an explosive, and its toxicity has been investigated by the authors. The

research included the development of a colorimetric method for the determination of aliphatic nitrate ester and a method for the determination of nitrate in biological fluids. With the aid of this method it was shown that PETN is very stable in comparison with the explosives ETN (erythritol tetranitrate) and nitroglycerin, both in vivo and in vitro. PETN is absorbed very slowly from the intestinal tract and very slow if at all through the intact skin. It is absorbed through the lungs but exerts a very moderate effect on the circulatory functions, weaker than ETN. It is neither a primary irritant of the skin nor a strong sensitizer. In sufficiently large doses it may produce changes of the respiration, circulation and spinal pressure qualitatively similar to those observed with other aliphatic nitric acid esters, but its toxicity is much lower. The customary methods of good housekeeping and of personal hygiene should be sufficient to prevent injury to workers.

- 847 Acute Nitroglycerine Poisoning. I. M. Rabinowitch. Canadian M. A. J., 50, 199-202 (March 1944)

The writer presents a brief outline of the toxicology of nitroglycerine. Its chief action on the body is that of a powerful vasodilator. The time between exposure and the appearance of symptoms of poisoning varies from a few minutes to an hour. Common symptoms are reduced blood pressure, severe headache, delirium, convulsions, sudden collapse, stimulation of respiration, fast and deep breathing and finally respiratory paralysis, cyanosis and death. Mental disturbances often follow the severe headaches and the patient may become literally mad. A resemblance is noted between nitroglycerine poisoning and alcoholic intoxication. Prevention of poisoning entails personal cleanliness, changes of clothing and abstinence from alcohol when headaches occur. The use of caffeine, sodium benzoate, belladonna, ergot and adrenaline may have a beneficial effect. -- J.I.H. & T.

- 848 Health Hazards in Manufacture of Quartz Crystals Used in Radio Communications. B. Feiner and S. Moskowitz. N. Y. State Ind. Bull., 23, 105-106 (March 1944)

In spite of the exceedingly rapid expansion of this industry during war time, the health of the workers has, in general, been protected against a possible serious source of quartz dust exposure by efficient methods of control inherent in the processes; by the intrinsic nature of the operations, and by the recognition of management in this industry of the importance of good housekeeping in minimizing atmospheric dust concentrations. Exposures to hydrogen fluoride gas released in etching of quartz surfaces and X-ray radiation used in testing of crystals were found to be adequately controlled in the usual manner. -- Author's conclusions.

- 849 Methyl Bromide Poisoning, with Special Reference to Nervous System Manifestations. R. N. DeJong. J.A.M.A., 125, 702-703 (July 8, 1944)

Methyl bromide is a toxic substance, and nervous system or other complications may arise from exposure to it. Recent allocation of methyl bromide by the War Production Board for use in the armed forces merits extreme care in its disposition and utilization. While it can be handled without injury if used intelligently, its toxic potentialities must be borne in mind, and its indiscriminate and careless use must be avoided. -- Author's summary.

- 850 Poisoning as Result of Exposure to Methyl Bromide. H. Heimann. N. Y. State Ind. Bull., 23, 103-105 (March 1944)

The literature on methyl bromide poisoning is reviewed, and five recent cases, one fatal, are described. They occurred in a methyl bromide ampoule-filling plant, operating with inadequate control apparatus. The post-mortem findings in the fatal case are presented. Engineering control, essentially by the use of adequate cooling systems, resulted in elimination of the hazard.

- 891 American Standard Allowable Concentrations of Toluene. American Standards Association. Z37.12-1943. 8 pp. 20¢. (Nov. 2, 1943)
The publication includes a brief tabulation of physical-chemical and toxic properties of toluene (toluol), a statement of permissible concentration, and directions for sampling procedure and analytical methods. We copy the most significant of these data. The flash point is 6.5 to 30°C. "Lower and upper explosive limits are respectively 1.27 and 6.27% by volume in air at atmospheric pressure and ordinary temperature. Ignition may be caused by an open flame or electric spark. Toxic properties: with acute exposure, toluene acts predominantly upon the central nervous system as a depressant causing headache, confusion, paresthesias (especially on the end of the shift.) In subacute and chronic poisonings it may cause, in single cases, damage to the blood and blood forming organs, but more often it results in enlargement of the liver. Toluene appears to be not nearly so toxic as benzene. Permissible concentration: the maximum allowable concentration of toluene shall be 200 parts per million parts of air by volume, corresponding to 0.752 mg. per liter at 25°C and 760 mm. pressure, for exposures not exceeding a total of 8 hours daily." The directions for sampling are the same as for a number of other toxic substances. "Analytical methods: The analytical methods commonly used for this purpose are based on drawing air through nitrating acid to form dinitrotoluene or drawing air into a suitable glass receiver and nitrate by contact with nitric acid. If interfering vapors are absent, toluene vapor may be collected from the air by absorption, and the amount determined. The heat of combustion method and the interferometer are also useful. Any other analytical procedure may be used provided that it is equivalent in applicability and reliability to those cited." References are given for details of analytical procedure and sources of other data.
- 852 Cashew Nut Oil. Queries and Minor Notes, J.A.M.A., 125, 92 (May 6, 1944)
A request is made for information regarding the effects of oxidized cashew nut oil on man. General statements are made that all cashew nut oil as used presumably is oxidized to some extent, that it is both an antigen and a skin irritant and that it is reported to induce systemic manifestations after absorption, of which headache is the first feature. Several investigators are quoted who agree, in general, as to its effects but differ in opinion regarding the irritant ingredient. One writer states that persons with an allergic background should not handle varnish that has a cashew nut oil base, although some who are mildly sensitive to the oil may become hardened to it. Another notes that European physicians of repute have administered this oil internally with alleged benefits in asthma, rheumatism, and certain organic neuropathies.
- 853 Study of Talc Miners and Millers. W. Siegal, A. R. Smith and L. Greenburg. N. Y. State Ind. Bull., 22, 434-437 (Nov. 1943) 463-469 (Dec. 1943)
The original paper, of which this article is a condensation was abstracted in our Digest, July 1943 (No. 665)
- 854 Industrial Fumes and the Damage They Can Cause to the Surrounding Vegetation. S. Gonzales de Haro. Ion, 3, 621-627 (1943) Spanish.
The damage caused to vegetation by acid fumes (sulfur dioxide, hydrochloric acid, hydrofluoric acid, nitrogen trioxide, nitrogen pentoxide) contained in the smoke from industrial plants is studied extensively. The best known methods used for the detection of the sulfur dioxide in the fumes and in the plant parts are described. Several steps for preventing such damage were tested. Direct condensation of the fumes by compression and cooling, use of lower temperatures, decomposition with hydrogen sulfide, washing of the gases, and construction of high chimneys were all found either unsuitable or too expensive; while installation of numerous chimneys proved rather successful owing to a lower concentration of the escaping acid fumes. The best results were obtained with special installations

based on the formula of Isaachsens : $t = r (m_1/m_a)^2 W_0 \cdot a$, in which m_1 = mass of air, m_a = mass of acid gases, t = time necessary to obtain a harmless mixture of gases, W_0 = velocity of evacuation, a = angle of divergence of fume radius. The essential factor is to increase the quantity of gases by injection of air by a ventilating system, helped by a conically shaped chimney and insertion of a rotating device. This system can be preceded by washing of the gases. The entire problem is studied for Spanish conditions. -- C.A.

- 855 Atmospheric Pollution in Dublin During the Year 1942. A. G. G. Leonard, P. McVerry and D. Crowley. Sci. Proc. Roy. Dublin Soc., 23, 164-170 (1943)
Average monthly figures are given for 1942 in grams per square decimeter including mm. of rainfall, pH of rainfall, insoluble matter, soluble matter, sulfate, chloride, ammonia and lime content of the soluble matter and total solids. Average yearly observations obtained with deposit gages from 1938 to 1942 are tabulated showing rainfall, soluble and insoluble matter and total solids. There was a slight decline in both soluble and insoluble deposits during 1942, but total solids showed a decided upward trend at both stations from 1938 to 1942. Curves describe the chlorine and sulfur trioxide averages in rainwater during the same period. Both places have the same general configuration of curve showing a minimum in summer and a maximum in winter. Graphs comparing pollution with temperature and deaths from respiratory diseases are presented. Periods of minimum temperature were periods of maximum pollution and such periods are followed by a maximum in deaths from respiratory diseases in Dublin city. The winters following 1940 were years of coal shortage and consequent diminishing pollution. Deaths in January, 1942 and 1943 were the lowest in the entire period studied but were considerably above the summer level maximum. Authors indicate that if records were kept over a sufficient period of years it might be possible to differentiate between increased deaths in winter due to pollution and those due to other causes. Measurement of sunlight was recorded for 2 periods but no definite conclusions could be drawn. -- C.A.

Methods of Detection and Determination

- 856 An Apparatus for Determining Poisonous Substances in the Air. M. M. Raer. Lab. Prakt. (U.S.S.R.) 16, 24-26 (1941)
A wooden box (45 x 36 x 19 cm.) whose front and back walls are removable, contains a movable frame with 4 absorption flasks of special construction and 2 rheometers attached to the frame by rubber bands, and connected with each other by rubber tubing. One of the rheometers is connected to an electric pump, which forces air through all the absorption flasks. Any of the flasks can be disconnected at will. In quantitative work only 1 absorption flask is connected; this permits an accurate measurement of the air passed through apparatus. The second rheometer is included in the system only if it is desired to decrease the amount of air passing through the system. Several poisonous gases present at the same time in the air can be detected or determined. The apparatus is portable and requires little time for the analysis. -- C.A.
- 857 A Rapid Spectrophotometric Method for the Determination of Methemoglobin and Carboxyhemoglobin in Blood. B. L. Forecker and F. S. Brackett. J. Biol. Chem., 112, 669-677 (March 1944)
A simple spectrophotometric method for the simultaneous determination of methemoglobin, carboxyhemoglobin, and total hemoglobin is described. Details of the

method as applied to the Coleman spectrophotometer and to a special photometer constructed for this purpose are given. Results obtained by this method are compared to Van Slyke gasometric determinations. The method is accurate to about 1 per cent. -- Author's summary.

- 858 Spectrographic Determination of Lead in Blood. A. Tracy and J. McPheat. Biochem. J., 37, 683-686 (1943)

A spectrographic method of lead analysis in blood is described, using platinum as the internal reference element. Blood lead concentrations encountered in 80 healthy subjects ranged from 5 to 120 micrograms per 100 ml. with a mean of 40 micrograms per 100 ml. and greatest frequency of from 40 to 60 micrograms per 100 ml. More than 50% of the results lie between 20 and 60 micrograms. Lead is transmitted to the fetus in amounts approximating those of the maternal circulation. Lead is present in human milk and is very slowly excreted in infant urine. -- Author's summary.

- 859 Radioactive Mercury in Mercury-Vapor Measurements. J. W. Irvine, Jr. and Clark Goodman. Reprinted from J. of Applied Physics, 14, 496-498 (Sept. 1943)

Radioactive mercury, Hg^{197} , was prepared by deutron bombardment of gold. This isotope was used as a tracer to establish an average concentration of 0.01 mg. mercury per cu. m. of air in a particular industrial operation suspected of causing chronic mercurialism. Mercury in quantities of 10^{-8}g was detected, and the method offers possibilities of higher sensitivity and more general application. -- Author's summary.

Control Methods

- 860 Air Disinfection in Ventilation. W. F. Wells. Heat, Pip. and Air Cond., 365-369 (June 1944)

The author reviews the theories developed and the progress made in the study of respiratory contagion and in the control of airborne infection, beginning with the period when it was believed that harmful bacteria can be carried only a few feet from the source and reviewing the extensive work accomplished since 1926 which gives conclusive evidence that bacteria may be carried far either in droplets or on dust. The best developed method of control is by ultraviolet light. It has proved very satisfactory under controlled conditions and has been approved by the Council on Physical therapy. However, much remains to be done in standardizing the intensity of the light at varying distances, investigating possible effects on human beings, and adapting the method to various types of rooms. For instance its application to schools and hospitals may be fairly simple but barracks with three tiers of bunks present difficulties. Dust is more difficult to disinfect by this method than droplets, and recent work has shown the considerable extent to which bacteria may be carried on lint from bed linen and carpets and other forms of dust. Ventilation as a means of removal is discussed, especially in addition to ultraviolet irradiation and aerosols. The author outlines the development of the use of aerosols which led to the use of propylene glycol in the forms of aerosol and vapor. He concludes: "Scientific investigations and practical experience during the past decade indicate that air disinfection can reconcile growing pressure to cut down the actual volume of fresh air displacement in air conditioning with growing demand for increased sanitary ventilation in the prevention and control of air-borne infection."

- 861 The Engineering Control of Some Solvent Hazards in War Industries. S. C. Rothman. Heat. Pip. Air Cond., 16, 370-375 (June 1944)

A review of the toxic effect of common solvents and of some control methods that have been proposed. A table presents the author's views as to the choice of methods of control in order of desirability; e.g. substitution, isolation, etc. The chronic as well as acute toxic effects must be familiar to the engineer and all solvents are to be regarded as potential hazards until proved otherwise.

- 862 The New Movement in Industrial Sanitation. M. H. Solworth. J.A.M.A., 125, 243-245 (May 27, 1944)

This discussion refers to industrial housekeeping and particularly to the scientific aspects of industrial janitorialing for elimination of dirt, a factor of especial importance in the food and beverage industry with which the author is connected. He conceives of it as an activity for special educational measures whose objects are protection of the physical elements in industry as well as human maintenance, to be accomplished by elimination of dirt, either by prevention or cleaning. Its importance to all industries is in its effect on transmission of respiratory diseases by dust borne bacteria, food poisonings from lack of cleanliness and on control of rodents and insects. Cleaning implies attention to architectural factors - e.g. painted and waxed sloping surfaces, tell-tale illumination, technical attention to the chemistry and physics of cleaning, and a properly organized janitorial staff. In the writer's sanitation organization, research is devoted to ultraviolet disinfection, fungicidal paints, non-skid floor waxes, production belt cleaners, implement fibers (brushes and brooms), floor and wall materials, cleaners for equipment, mops, detergents, insect and rodent exterminators. A school for "industrial sanitationists" is being established in Louisville and a "Journal of Industrial Sanitation." A "National Congress of Industrial Sanitation" will be held in Louisville within a few months."

- 863 Graphic Estimating of Daylight. J. M. Dalla Valle. Architectural Rec., 95, 83-84 (May 1944)

The author gives data and method of nomographic calculations for the amount of daylight illumination available when the size of the windows, latitude and direction are known.

- 864 Ultra-Violet Radiation - Its Role in Industrial Medicine. F. Ellinger. Ind. Med., 13, 298-300 (April 1944)

The authors have attempted, in this short review, to point out the benefits and risks involved in the use of ultra-violet radiation and to explain the reasons for these reactions. They believe that the relative sterilization of the air by ultra-violet radiation in rooms where workers are closely grouped will cut down communication of diseases insofar as the organisms producing them are air-borne. They believe, also, that the judicious use of general body exposure to ultra-violet rays is able to increase the efficiency of individual workers as producers.

- 865 Suggestions for Reducing the Fire Hazards of Air Conditioning Systems. J. A. Neale. Heat. Pip. and Air. Cond., 16, 358-360 (June 1944)

The principal fire hazard in air conditioning systems arises from combustible material constituting part of the filter and accumulating in the ducts. Unfortunately some of the most combustible materials will make filters that are efficient and cheap. However, even if the filter does not burn freely, the coating or adhesive may give off smoke or toxic materials. Care must be taken to keep the entry and ducts clean. Welding torches, electrical causes, cigarette butts and fire from outside are also frequent causes. When fire or smoke is present in the system, first, the blowers should be shut down, the system divided to prevent travel of smoke and fire, and finally the fire extinguished. Automatic detection of smoke is highly desirable; the electric eye is better than thermal methods.

Where the utmost in protection is desired, the automatic detectors, when smoke is present, should stop the blowers, close sectionalizing dampers, and give an alarm. When the flow of air has stopped and fire is present, thermal devices may be used to operate a sprinkler system and close dampers at duct outlets and fire walls. Another hazard existing under present conditions is the use of flammable refrigerants.

Industrial Medical Practice

- 866 Industrial Medical Problems in War Production. T. L. Hazlett. Ann. Internal Med., 20, 371-375 (March 1944)

The war has brought about increased personnel, invasion of industry by the older worker, the handicapped and the woman employee, new hazardous materials and processes and increased absenteeism. Improvements in industrial medical service include first aid, physical examinations, laboratory studies, nutrition and health education. The physical welfare of the supervisory group is a part of the problem that has often been neglected. Their hours and intensity of work have greatly increased, and hypertension and cardiac abnormalities were found frequently in a study of the supervisory group of Westinghouse employees. Results of the physical examination are reported to the employee's physician.

- 867 Current Developments Affecting the Physician's Role in Manpower Utilization. C. Kuh and B. Hanman. J.A.M.A., 125, 265-270 (May 27, 1944)

In a program of physical demands and capacities analysis a new technic has been evolved in which a set of physical and environmental factors forms a basic pattern which the job analyst uses to analyze the physical demands of jobs, the physician uses to evaluate the physical capacities of workers, and the placement officer uses to match the physical capacities of workers and the physical demands of jobs. Some advantages of the program are: (1) It specifically defines the physical capacities of workers and the physical demands of jobs. (2) It overcomes shortcomings of previous approaches, such as the classification of physical capacities in terms of sedentary, light, moderate and heavy work and the classification of physical demands in terms of none, little, moderate and great. (3) It is adapted for preplacement and replacement evaluation. (4) It presents a positive approach, emphasizing physical capacities, not medical diagnoses or physical handicaps. (5) It preserves the confidential doctor-patient relationship. (6) It considers physical and environmental factors. (7) It is adapted for the selective placement of all workers - male or female, young or old, emotionally stable or unstable, able bodied or physically limited - and particularly for the placement of the war disabled.

- 868 A Visual Service for Small Manufacturing Plants. H. S. Gradle. J.A.M.A., 125, 253 (May 27, 1944)

A service devised by the Illinois Society for the Prevention of Blindness for use in the smaller manufacturing plants is described. Features of the plan are a visual survey of each employee and a survey of the plant to determine the adequacy of illumination as well as to discover any visual hazards that may exist. The society also offers the services of its staff to promulgate a safety campaign among employees of the plant. The management pays a fee of \$1 per employee for these and other services.

- 869 Medicine, Labor and Industry Join Hands in Philadelphia. C. F. Long. J.A.M.A., 125, 254-255 (May 27, 1944)

This paper describes methods used in Philadelphia to coordinate a program for industrial health between the state and county committees and industrial organizations and labor groups. Steps included: (1) The establishment by the Philadelphia County Medical Society of a course in industrial health for physicians and nurses; (2) An industrial survey by the State Department of Health of 1000 plants in Philadelphia County; (3) The development of a technic for installing medical services in small plants by the Philadelphia board of trade health committee, which was endorsed by the A.F. of L. and C.I.O. While progress in getting health service into Philadelphia's industries has been slow, the writer feels that important accomplishments have been made and a good foundation laid for future work.

- 870 Sixth Annual Congress on Industrial Health: Report of Chairman of Council. S. J. Seeger. J.A.M.A., 125, 239-240 (May 27, 1944)

The physician should be the central figure in health activities, whether in the field of clinical medicine, public health or preventive medicine. The problems of medical service in this country are being solved in many areas by developments which center about industry and are essentially on a grass roots basis. In a majority of hospitals in America the staff has no control over medical policies. The organization of many hospitals is obscure or so ill defined that medical staff organization cannot contact the lay individuals who control policies. The organization of industry is such that it lends itself to a logical and ethically sound approach to the development of health programs. Because of the widespread interest in this type of practice, the practical application of the principles of medical ethics to the professional and business relationships of medical groups or clinics should be restudied and clarified and defined. -- Author's summary.

- 871 State Support of Industrial Hygiene Services - An Urgent Necessity. W. F. Draper. Am. J. Pub. Health, 34, 224-230 (March 1944)

In addition to the coordinating function within the health department, the state division of industrial hygiene has equally important responsibilities in maintaining working relationships with other state agencies and organizations, particularly with the state department of labor and the industrial accident commission. State appropriations should be adequate to maintain as the minimum, essential personnel to conduct industrial health surveys, a physician, an engineer, a chemist and a nurse. A clerical staff is needed to assist in making reports and keeping records. A health educator should be added to state health department staffs for full time assistance on industrial health education. The appeal for state appropriations can be presented as an immediate emergency need, and at the same time postulate a permanent program to meet peace time requirements. -- J.I.H. & T.

- 872 Some General Principles Underlying the Primary Local Treatment of Burns. - A Review. S. M. Levenson. J. Ind. Hyg. and Tox., 26, 156-161 (May 1944)

The care of the local areas in a burned individual is but a part of the general treatment of the patient. It should be based as far as possible on the physiological and pathological changes brought about by the thermal injury. Local plasma loss should be limited, further contamination prevented, and infection minimized. There should be no local or systemic toxic effects. Application should be rapid and relatively easy, and minimum of post-operative attention should be required. These aims are met in part by the application of pressure dressings with splints or close fitting casts without preliminary cleansing. The use of surface escharotics fails to meet these aims in several respects. The value of chemotherapeutic agents is under investigation. It should be

stressed, however, that no fixed routine be established for all cases. A clear understanding of the underlying principles will make it clear when departure from routine is indicated. An extensive bibliography is appended. -- Author's conclusion.

- 873 The Nitrogen Requirements of Patients with Thermal Burns. F. H. L. Taylor. J. Ind. Hyg. and Tox., 26, 152-155 (May 1944)

The dietary requirement of a burned patient cannot be generally prescribed, since the protein requirement must be determined by the extent, severity and location of the injury, the former state of nutrition, the consequent pathologic states, and the nitrogen balance. However, for purposes of simplification it is fairly safe to assume that the burned patient will require as a minimum 2 to 3 grams of protein and 60 calories, per kg. of body weight, from the earliest moment that such diet can be instituted.

- 874 Nutritional Status of Aircraft Workers. Anon. Nutrition Reviews, 2, 107-109 (April 1944).

A review of the study by Borsvok, Alpert and Keighley (Abstract 965, 1943). Of interest is the author's comment that this study illustrates the lack of any standard for detecting nutritional deficiencies. He thinks it important in the interpretation of a test of nutritional status to have clearly defined the stage in the development of a deficiency which it is capable of detecting, whether it be at the level of subsaturation, disturbance of function, or anatomic changes of an acute or chronic nature. Studies such as this, which show the effect of nutritional supplementation, should clarify the validity and usefulness of these diagnostic tests and yield factual information regarding the influence of nutrition, on health and productive efficiency.

- 875 The Detection and Treatment of Nutritional Deficiency Diseases Among Industrial Workers. T. D. Spies. J.A.M.A., 125, 245-252 (May 27, 1944)

The author's studies indicate that; (1) when endemic deficiency diseases occur in individual members of a family it is wise to study the family as a whole. Restrictions of the family diet may result from illness of the wage earner or illness in the family, unexpected expense or insurance payments, (2) efforts should be directed "toward an early and accurate diagnosis and the application of the following general principles of therapy: - a liberal amount of a well-balanced diet, symptomatic treatment of coexisting diseases, removal of conditions causing excessive requirements for the essential nutrients and the judicious administration of adequate amounts of therapeutic substances such as dried brewer's yeast powder, liver extract and vitamins in the form of synthetic substances or concentrates or minerals." (3) meticulous clinical study is needed before a diagnosis of nutritional deficiency diseases is justified. Methods of diagnosis and therapy are discussed which are effective in the average case. Three cases are described which illustrate the necessity of specialized methods of therapy. -- Condensed from author's summary and conclusions.

- 876 Conquest of Tuberculosis in Industry. H. E. Hilleboe and D. M. Gould. J.A.M.A., 125, 241-243 (May 27, 1944)

The paper is concerned chiefly with the value in control of tuberculosis, of small film technic, which makes possible mass chest X-ray examinations. The experience of the tuberculosis control office of the Public Health Service in surveys of large industrial groups with the use of transportable 35 mm. X-ray units and 4 X 5 machines is discussed. The technic of mass radiography has been greatly simplified by the adaptation of the Morgan phototimer to 35 mm. photofluorography. The authors caution against drawing hasty conclusions from the interpretation of a single flat plate of the chest and advise careful clinical study before final diagnosis is made. After-care and rehabilitation of tuberculosis industrial

workers must be provided through cooperation of local welfare agencies, voluntary tuberculosis association, management and labor, the health department and local physicians.

- 877 Cardiovascular Survey of Supervisors II. P. M. Rike and F. J. Gregg. Penn. Med. J. (April 1944)
In 1941 a large eastern manufacturing company instituted a program of yearly cardiovascular examinations among supervisory and executive personnel. Because of the relatively high incidence of cardiovascular disease among individuals occupying such positions, the study was undertaken to determine the age incidence of degenerative disease of the cardiovascular system and to determine whether or not such yearly examinations would be of value in detecting such processes at an early stage. All abnormalities showed a marked increase as the 40-year old age group was approached. A discussion is included of the different methods of examination. The work is being repeated yearly and will be reported.
- 878 Flicker Fusion Frequency as a Test of Fatigue. J. Brozek and A. Keys. J. Ind. Hyg. and Tox., 26, 169-174 (May 1944)
The flicker fusion frequency (frequency at which a flicker begins to appear as a continuous light source) has been proposed and used as a test of fatigue. According to the author's experiments it changes slightly under fatigue conditions, but not significantly enough to be of value in estimating fatigue.
- 879 Report in Welding Training and Shipyard Employment. A.H. Clawson. Mimeograph, 10 pp., U. S. Office of Education, Wash. D. C.
The writer, who is a Special Agent, Training Women for War Production, trained as a welder and took employment in a shipyard "to ascertain in what ways we can do a better job of training women for shipyard employment." She concludes that the dropping out of women welders on the ways is due not to the difficulty of the work itself but to six "chief obstacles": - (1) Strangeness, (2) Health, (3) Noise, (4) Height, (5) Climbing and (6) Inadequate skill and lack of confidence. She believes that these six causes of turnover among new workers can be met by more careful selection prior to employment, more practical training, and orientation, in which counseling should play a large part.
- 880 Supervision of Pregnant Women in Factory Employment. J. V. O'Sullivan and L. B. Bourne. Brit. Med. J., 1, 108-110 (Jan. 22, 1944)
The experience is quoted from a light engineering factory where an ante-natal clinic has been established. A total of 178 pregnant women were attended who were employed on such work as soldering, welding, and assembling small machine parts. The arrangements made for keeping a watch over these women is described; they are ~~run~~ in close collaboration with the welfare department. No evidence was forthcoming that factory work close up to confinement in any way injured health, a matter of considerable importance for women employed upon skilled work. The suggestion is made that clinics may be established to cover groups of factories in an area. The clinic should keep watch over the mothers when they return to work which should not be before three months after confinement. Where the services of the mothers are urgently needed in the factory, day nurseries should be set up. There is need for a general scheme for rationalizing the position of pregnant women in industry for the whole country. -- J.I.H. & T.

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